

**CLIMATE CHANGE ADAPTATION PROGRAMS IN THE
SOLOMON ISLANDS:
A STUDY OF PERCEPTIONS AND RELATIONSHIPS**

Scott Butcher

A thesis submitted in partial fulfilment of the requirements
for the Degree
of Master of Arts in Anthropology
University of Canterbury
2019

Table of Contents

Acknowledgements	4
Glossary	5
Abstract	6
Chapter 1 Introduction	8
Broad aim of research	8
Specific objectives	8
Key questions	8
Research context: the Solomon Islands	9
Climate change adaptation (CCA)	12
Summary of thesis chapters	13
Conclusion	15
Chapter 2 Climate change adaptation programs in the Solomon Islands	16
Introduction	17
Anthropogenic climate change as an existential threat	18
Government and business responses to climate change	20
Climate change as a Solomon Island development challenge	22
International development and climate change nexus	23
The origins and emergence of climate change adaptation	25
CCA program responses to climate change	27
CCA and provincial government and communities in the Solomon Islands	32
Gendered approaches to climate change in the Solomon Islands	34
Conclusion	35
Chapter 3 Methodology and Methods	37
Introduction	37
Research location	37
Data collection	38
Literature review	38
Field work	39
Participant recruitment	42
Data analysis methods	45
Ethics and ethical issues	47
Chapter 4 Critical factors influencing climate change adaptation	49
CCA and the challenges of neoliberalism	49
Cultural values and beliefs and CCA	52
Social structure, gender and impact on CCA	54
Perceptions of cultural inadequacy and deficit	55
Local perceptions, voices and relationships	56

Communication and language: influences on CCA programs	57
Conclusion	58
Chapter 5 Analysis of field research data	63
Introduction	61
Focus of questions	61
Thematic analysis categories	62
Analysis of key findings	64
Transformative dynamics of market forces on CCA programs	64
Risk and risk avoidance	67
Christian beliefs and institutions	68
Relationships and connections	70
Perceptions of abundance	72
Observations of climate change and natural disaster	74
National, provincial and community-level governance	76
Traditional governance systems	78
Centralised governance	79
Awareness and education workshops	81
Economic norms, opportunities and exploitation	83
Dependency and self-determination	85
Traditional ecological knowledge and sovereignty	86
Contract culture	88
Audit culture - vulnerability assessments and audit 'tools'	91
Comprehension and language of CCA and DRR	97
Perceptions of cultural inadequacy and deficit	98
Conclusion	102
Chapter 6 Conclusion	105
Introduction	105
Identification of main challenges	106
Implications for future research	109
Recommendations for improvements of CCA programs	109
Conclusion	110
List of Figures	
Figure 1: Map of the Solomon Islands showing research locations in Guadalcanal and Choiseul Province	38
Figure 2: Fuel depot being constructed in Choiseul bay in 2013	65
Figure 3: Logging ship departing Choiseul Bay with logs removed from Bakele land in 2013	66
Figure 4: Subdivison on Sipuzae Island in 2010	66
List of Tables	
Table 1: List of semi-structured interview participants	45

Acknowledgements

This research is the outcome of a fateful first trip to the Solomon Islands as a volunteer with Volunteer Service Abroad in 2010. The experience had a profound influence, exposing me to the impact climate change was having in the Solomon Islands. Initially I was supported by Jimmy and Mary Kereseka who provided support when I started out as a volunteer. When field research began in 2017, Paul Roughen provided a location to work from in the Pacific Horizons Consultancy Ltd office in Honiara. While working from this office, Kellington Simeon provided support and a sounding board for different ideas that started to emerge. When in Choiseul, Basilio Solevudu provided a work space, support and feedback as the field research process unfolded. Jessie and Malonese Pitanöe, and family, provided with food, accommodation, transport by. Faustino provided entertainment with his keyboard playing and trying to teach me some local language words and phrases. Thank you also to the participants in both Honiara and Choiseul who provided valuable time to be part of this research.

Supervisory support was provided by primary supervisor, Professor Steven Ratuva who successfully managed to focus the research when it was needing clarity. His ability to see the big picture and provide practical ways to move forward was exceptional. My secondary supervisor Piers Locke, also provided important critique to challenge my thinking on assumptions and also exposing me to important literature.

Thanks also to the Sociology and Anthropology post graduates who have been my circle of colleagues over the past 2 (or more) years and also providing valuable contributions. Thank you Karell, Cushla, Viet, Cliff, Lizzie, Morgan, Leon, Charlie, Darryl, Yulinda and any others I may have missed. Finally the biggest thanks has to go to my family who have encouraged me through this journey. Thank you to my brothers Mike and Mark, but most importantly to mum who allowed me to overstay at her house while I completed this research. She supported me with numerous fine home cooked meals, a listening ear and words of encouragement. Hopefully one day I can repay the favour.

Glossary

Ausaid	Australian Aid
BMZ	Federal Ministry for Economic Cooperation and Development
CCA	Climate Change Adaptation
CHICCHAP	Choiseul Integrated Climate Change Programme
CRISP	Community Resilience to Climate and Disaster Risk in the Solomon Islands Project
DRR	Disaster Risk Reduction
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
NRDF	Natural Resource Development Foundation
PIC	Pacific Islands Country
PRRP	Pacific Risk Resilience Programme
REDD+	Reducing emissions from deforestation and forest degradation
SIDS	Small Island Developing States
SPC	The Pacific Community
SPREP	South Pacific Regional Environment Programme
TEK	Traditional Ecological Knowledge
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

Abstract

This thesis looks at perceptions and relationship of those involved in climate change adaption programmes in the Solomon Islands. Climate change adaptation (CCA) programs have become a major part of donor response to climate change in the Pacific. In this research a semi-ethnographic approach was employed, supported by a case studies approach. Data was incorporated from semi-structured interviews, participant observation and relevant literature. This thesis sought to examine how perceptions and relationships influence stakeholders involved in CCA programs, but also how beliefs regarding climate change programs create a distinct program culture. The research concludes that CCA program culture was influenced by neoliberal ideology, expressed through audit and contract culture, perceptions of cultural deficit, aversion to risk and even efforts to co-opt existing institutions to support program delivery. Recommendations are made on the potential of further research utilising a perspectives and relationships based approach to provide a holistic representation of stakeholder worldviews.

Chapter 1

Introduction

Climate Change Adaptation (CCA) is an overarching term for policies, program and actions that seek to help people to adapt to existing, predicted or unanticipated consequences of climate change (Madsen, Andersen, Rygaard, & Mikkelsen, 2018). In the Pacific, CCA is a rapidly expanding field due to the increasing seriousness of the challenge that climate change poses to the culture and livelihoods of those that live there (McNamara, 2013). It is therefore not surprising that CCA receives substantive resources from a range of multilateral and bilateral donors. While these CCA programs bring the possibility of great change they also confer significant obligations on those involved, often in an intense short-term process. This places importance on ensuring a balance of contributing voices and worldviews, that can help bring equality of influence.

CCA programs are faced with the magnitude of the challenge posed by climate change and therefore the requisite need for socially transformative action to facilitate adaptation. Often when CCA programs are implemented, engagement with stakeholders is important to determine the specificities of project scope, to seek local knowledge or *kastom*¹, record observations of climate change or collect data for vulnerability assessments. Missing from these engagements are the explorations of perceptions of programs that would provide insight into stakeholders' experiences of CCA programs. The role of perception is important for two reasons, firstly it provides insight into stakeholders' experiences of CCA programs and how stakeholders determine their relative 'success', but more fundamentally it provides an insight into the diverse and at times conflicting worldviews of stakeholders (McGregor, 2004; Schwarz et al., 2011).

This research therefore provides some insight into the culture of CCA programs in the Solomon Islands through stakeholder perceptions and relationships. Reviews and assessments of CCA programs are often based on institutional process change, project outputs and financial expenditure, typically in the interest of international donors and foreign governments. This study aims to expand this narrow assessment of program culture and provide an in-depth and critical analysis of perceptions of stakeholders involved in CCA and

¹ *Kastom* refers to long held traditional beliefs or practices. The term is expanded upon in page 12.

also the influences that relationships play in jointly influencing CCA programs. In doing this it also seeks to explore how stakeholders relate to and perceive programs, and how CCA programs challenge normative practices and develop their own program culture.

Broad aim of research

The broad aim of this research is to examine how perceptions and relationships of stakeholders involved in CCA programs in the Solomon Islands influence not only how groups and individuals engage in climate change-related activities, but how beliefs regarding programs on climate change are creating a distinct CCA culture.

Specific objectives

This research seeks to provide contextualisation on the 3 prominent CCA programs currently operational in the Solomon Islands and their associated culture and also the culture they create. Furthermore, it seeks to explore and provide a ‘thick’ description of stakeholders’ perceptions of CCA program influence on interpersonal and organisational relationships, particularly between CCA programs, central and provincial government. Finally it seeks to explore and provide analysis of the perceptions stakeholders have with other areas of cultural, economic, political and ecological importance frequently excluded from conventional CCA program narratives.

Key questions

1. How are individual and organisational stakeholders treated and their priorities integrated during engagement with CCA programs?
2. How do stakeholders perceive relationships with CCA programs beyond traditional CCA narratives which are focused on delivering program or project outputs?
3. How do stakeholders perceive CCA programs influence on associated cultural, economic, political and environmental factors, often omitted from traditional CCA program narratives?

Rationale

There are a number of reasons why I pursued this research. Foremost is that climate change is already impacting on the Solomon Islands, and the responses that are currently being implemented do not always appear to provide solutions that communities or provincial governments believe are appropriate, effective or even sustainable. A second reason is that CCA programs are so focused on delivering expected outputs that there is little time and space allowed for exploration of power relations, cultural worldviews and lived experiences – important but less tangible expressions of cultural context. I considered that further critical exploration would help conceptualisation of more culturally appropriate, equitable and therefore sustainable approaches.

A third reason is that there is a creation of a culture focused on delivering tangible projects quickly in a culture where long-term and meaningful relationships are important. Programs are often heavily influenced by those funding them rather than communities, provincial government or even national government, who are meant to be the recipients. This greatly impacts on the associated relationships. Even though those promoting CCA programs are aware of this, it continues to occur. This being the case, intended recipients see CCA programs as having largely self-governing agency often impenetrable to outside influence.

Research context: the Solomon Islands

The Solomon Islands are located in the Western Pacific Ocean, 1,200km northeast of Australia and consist of over 900 Islands spread over 1,700km (Fraenkel, 2004, p. 20; Geoff Lipsett-Moore, 2010, p. 2). Melanesians make up the dominant ethnic group in the Solomon Islands at around 94.5% of the population, with smaller numbers of Polynesian, Micronesian, Asian (mainly Chinese) and Europeans (Fraenkel, 2004, p. 20). Linguistic diversity is represented by between 64 and 76 distinct languages, representing extraordinary cultural diversity (Fraenkel, 2004, p. 20; Richards, 2014, p. 25). There continues to be efforts to recognise this diversity through what Kabutaulaka refers to as “Melanesianism”, the emergence of a positive, distinct and diverse Melanesian identity (T. Kabutaulaka, 2015).

The population of the Solomon Islands is 642,000 people, only 19% of which reside in urban areas and the remaining 81% residing in rural areas (Solomon Islands National Statistics Office, 2015, p. x). Population growth is relatively high, with well over half of the population less than 24 years old (Solomon Islands Government, 2012, p. 1). In rural communities this population growth is placing pressure on natural resources that have historically been abundant, particularly food resources (World Bank Group, 2017, p. 48).

To outsiders² an initial impression may be that Solomon Islands life is idyllic and simple. However, from the time I have spent in Choiseul during this research and earlier suggests an increasing complexity to rural life, particularly with the continued rise of extractive industries such as mining and logging creating tension around land ownership and distribution of resources; and also changes contributed by technologies (Hobbis, 2018). Observations on the transition from subsistence living to a more cash-based economy is echoed by many people, both within the Solomon Islands and also in academia, and this is generally referred to negatively due to an associated loss of elements of culture and a rise in self-interest (Hviding, 1996; Kent, 1972).

The capital city, Honiara, is where most donor programs and central government offices are located, making it a focal point for both donor and government activity. The difference between village life and life in Honiara can be stark. While Honiara is the capital of the Solomon Islands, it is often viewed as something almost entirely separate, with people from rural communities venturing to Honiara to pursue education or employment opportunities not found in the provinces or as a location for a break from village life. Life for many within Honiara can be extremely hard, with low wages and often unpredictable payment, especially noticeable in the government sector where employees will often have a second source of income through a private business. For those not working, life requires the support and good will of family to provide food and shelter which is often at great financial cost to the provider. This can be contrasted with rural living which although it lacks access to the extensive education or employment opportunities found in Honiara, often provides better access to natural resources and community networks.

² Outsiders refers to individuals unfamiliar with the Solomon Islands. This includes foreign consultants, tourist and some CCA program staff who have spent limited time there or have limited relational connections.

The Solomon Islands is considered to be in the 'low' human development category as it has development indicators comparing unfavourably to 'developed' countries in the region, including Australia and New Zealand and even other SIDS (Small Island Developing States) such as Kiribati and Vanuatu (UNDP, 2018a; 2018b, p. 3). These indicators show a country facing many complex challenges across a range of categories typically used to assess a country's development. For example, the infant mortality rate in 2016 was 21.8 infant deaths per 1000 births, the second highest in the Pacific with only Papua New Guinea (42.5 per 1000) having a higher infant mortality rate (UNDP, 2018a, p. table 5). Data for life expectancy shows an average of 71 years which is lower than that of Tonga and New Zealand at 73.2 and 82 years respectively (UNDP, 2018a, p. table 1). Education also compares badly, with an average of only 10.2 years of schooling compared to 18.9 years for individuals in New Zealand (UNDP, 2018d).

The culture of the Solomon Islands is strongly influenced by *kastom*. *Kastom* are elements of culture that link to traditional practices from the past, also referred to as *taem bifo* (time before)(Dinnen & Firth, 2008, p. 114). *Kastom* practices have typically changed over time through colonial, religious, capitalist and other socio-political influences (Dinnen & Firth, 2008, p. 79; Hviding, 1996, p. 79). Well-known *kastom* practices are those associated with paying *compensation* for reconciliation of conflicts or paying bride price (Fraenkel, 2004, p. 7), but it also guides social practices and management of natural resources (Hviding, 1996). Solomon Islands culture and Melanesian culture more broadly are often synonymous with 'Big Man' leadership (Godelier & Strathern, 1991). However, it is now accepted that a range of traditional leadership systems exist, including chiefly hierarchical systems more commonly associated with Polynesia which are present in places such as Ontong Java and Tikopia and Anuta Island in Temotu Province (Feinberg, 2004; Firth & McLean, 1990). These leadership systems have been greatly impacted by the emergence of capitalist development interventions. Cox (2009) refers to the emergence of passive clientelism and paternalist relationships being influential in leadership more generally.

The economy of the Solomon Islands is largely influenced by extractive industries such as logging of its indigenous forest cover and some plantation forestry. Logging has been the major contributing factor to growth; however, as logging declines due to unsustainable harvesting increasing focus is likely to go on mining (World Bank Group, 2014). Bauxite mining currently occurs in Rennell Province, with gold mining having occurred in Guadalcanal

Province and nickel mining currently underway in Isabel Province (Radio New Zealand, 2018a). The environmental impact of logging and mining is already substantial. A good example of this is the recent grounding of a ship transporting bauxite in Rennell Province, resulting in a large oil spill which has in turn impacted on marine food resources (Radio New Zealand, 2019a). Marine resources, fresh fish in particular, are important as they provide a substantial amount of the protein in people's diets (Aswani, 2002; Bell et al., 2009). Both logging and mining operations have created and exacerbated conflict between different ethnic groups and contributed to the fuelling of ethnic conflict in the Solomon Islands between 1998 and 2003 (Allen & Porter, 2016).

Climate change adaptation (CCA)

Climate change has become an overriding ontological challenge. The realisation of the problem has grown since the initial discovery of the potential of greenhouse gases to trap heat and warm the planet in the 1890s, with further major discoveries occurring from the late 1950s through to the 1970s showing that the Earth's biosphere can be affected by humanity's intentional and unintentional actions (Mann & Ebooks, 2012; McKibben, 1989; Weart, 2003). This growing scientific body of knowledge continues to be reinforced by contemporary research that shows a warming of the arctic, changes to ecosystems and sea level rise, melting glaciers and warming oceans (IPCC, 2018).

Climate change adaptation as a formal policy framework does not have a long history, having emerged in 1992 with the endorsement of the United Nations Framework Convention on Climate Change during the Agenda 21 Rio Earth Summit, which makes reference to CCA. In the Solomon Islands, CCA and associated approaches such as Community Based Disaster Risk Management (CBDRM) have been part of the natural disasters response system for a number of years (Talo, 2008). Early climate change programs began in the late 1990s and have expanded, so by 2015 there were around 46 climate change-related projects operating in the Solomon Islands (Ministry of Environment, 2015; Talo, 2008).

As a young developing field, CCA operates with a number of evolving assumptions. In the Solomon Islands, one of these is the notion of limited agency of individuals (i.e. limited capacity for independent action). However, emerging counter narratives demonstrate that

while on the basis of commonly used measures Pacific places and people may be vulnerable, cultural knowledge and behaviours are recognised as providing resilience³ (Leonard, Parsons, Olawsky, & Kofod, 2013; Wenzel, 2009). CCA programs also have a tendency to exceptionalise climate change above other development needs, with exceptionalised priorities often addressed through delivery of specific built projects (Barnett & Campbell, 2010). However, there is now an increasing focus on policy and higher level interventions.

CCA interventions also frequently display a limited or ‘thin’ description of the perspectives of those who are the intended recipients (Geertz, 1973). While the climatic factors influencing vulnerability are understood through either first-hand observations or scientific research, less well understood are the perspectives participants have of CCA programs and the influences these perspectives have on program culture. This is a gap that this research will attempt to address.

Summary of thesis chapters

Chapter 1 introduces the broad aims, specific objectives and rationale of this research, providing background and context on the conception of the research topic and discussion on why it was chosen as a Master’s research topic. Some contextual information about the Solomon Islands is provided to help situate the field of study, as well as some of the social, cultural and environmental factors in which the various stakeholders live and work. The introduction also provides a brief summary of CCA in the Solomon Islands.

Chapter 2 expands on the evolution of understanding of anthropogenic climate change⁴ from what was initially a modest and slowly unfolding discovery by scientists, to what is now considered an all-encompassing challenge of modernity cutting across social, cultural, political, economic and environmental fields. Climate change is explored as a development challenge for the Solomon Islands and then placed within the context of international development. The last sections in the chapter cover climate change adaption (CCA) program responses in the Solomon Islands. An exploration of the significance of these programs and

³ Resilience is the ability of institutions, individuals and the environment to respond and adapt to the influences of climate change

⁴ Anthropogenic climate change is change to the planet’s climate that can be attributed to human influences and excludes natural background warming or cooling of the planet.

observations on their operational norms and assumptions observed over the research period and prior are included to establish context which is relevant for later analysis. Background on provincial government and connections with communities are examined as most programs seek influence at this level. Programs also pay significant attention to the influence of gender and this is therefore briefly covered.

Research methodology and methods are covered in Chapter 3. This chapter provides detail on the locations research took place. It then covers the data collection process that took place and the different methods used to collect data which included a literature review, semi-structured interviews, and participant observation. Both case study and ethnographic methodologies were used and details of these are provided. The section on participant recruitment and background includes participants' cultural, educational and organisational backgrounds. Data analysis methods are then explored with more detail provided on the thematic analysis approach used. The final part of the chapter examines the ethical issues that were relevant for this research.

Chapter 4 examines the literature that conceptually frames this research. It covers areas such as the emergence and origins of climate change and CCA, CCA approaches as they have emerged. It then delves into the specific challenges to CCA programs implemented in the Solomon Islands. These include the influences of neoliberalism⁵ and its expressions in audit⁶ and contract culture⁷. Examination is also given of cultural values and beliefs and how these influence CCA programs, specifically traditional ecological knowledge. Social structures are explored, in particular past focus on the concept of the 'Big Man'⁸, but also the influence of gender. Widespread perceptions of underlying deficit perceived to exist in both culture and private and state sector systems are explored as it represents a fundamental assumption of many CCA programs. Finally communication and language are explored, as technical language is heavily used by programs.

⁵ Neoliberalism is defined as an extreme version of capitalism, favouring a corporate economic model that seeks smaller government, less regulation and market based solutions.

⁶ Audit culture is characterised by processes of accounting and ranking to guide bureaucratic process and decision making

⁷ Contract culture is characterised by the influence of contracts on relationships, bureaucratic

⁸ A 'Big Man' is a leader who demonstrates leadership qualities and is chosen to provide leadership. The difference between a 'Big Man' leadership system and a chiefly system is that 'Big Man' leadership is not necessarily inherited through family lineage.

Chapter 5 includes the analysis of the research themes that emerged. In total 13 themes were analysed out of a total of 21 themes initially identified. Those selected had analytical rigour through either a large data set or distinct emerging concepts. The scope of these themes was extremely diverse; however, the common connection they have is of stakeholder perspectives of CCA programs or that they explore aspects of relationships that were a part of CCA engagements.

Chapter 6 provides an overall summary of the main findings of this research. It covers how the research has addressed initial broad aims of the research in providing further characterisation of the 3 CCA programs that were a part of this research. It summarises how a 'thick' description has been provided on the perceptions those involved in CCA programs held in regards to relationships between programs. It then provides a summary of the analysis of participant perceptions of other diverse areas of culture, economics, politics and ecology that are related to CCA programs in the Solomon Islands. It also outlines the challenges to CCA in the Solomon Islands and some suggestions for further areas of exploration that could be pursued in light of the findings from this research.

Conclusion

Climate change has been extensively researched and continues to be a rapidly growing area of research, particularly the study of changes to biophysical processes. By contrast, CCA has been far less explored through research, with CCA programs in the Solomon Islands almost entirely unexplored. The broad aims, specific objectives and rationale all point towards cultural and social elements that while widely acknowledged by most CCA programs as important, are poorly explored and understood in the context of the Solomon Islands. This was demonstrated clearly through long-term observations of CCA programs in the Solomon Islands and through work as a volunteer and consultant, leading eventually to the development of the initial concept of this research project.

Following the outlining of the broad aims, specific objectives and rationale, a brief exploration of the Solomon Islands research context established some background to the country and operational context in which CCA programs are implemented. These are explored

in much more detail in later chapters; however, some brief demographic, health, culture and environmental background information provide some useful context.

Chapter 2

Climate change adaptation programs in the Solomon Islands

Introduction

This chapter provides background into the broader context of climate change adaptation programs in the Solomon Islands. It begins by providing context of the evolution of understanding of anthropogenic¹ climate change as an existential threat to society and the planet. It looks closely at the development of climate change science from early discovery of humanity's ability to influence the atmosphere to later widespread acceptance by modern scientists that action to address climate change is possible and necessary.

The chapter then proceeds to examine the role of government and business responses to climate change more broadly as both seek to implement response to climate change. Examples of action being taken in New Zealand are given that demonstrate some of the actions occurring through political and corporate avenues, and although communities are seen as critical to climate change responses, it is the political and business realms that are often held up as drivers of change (Klein, 2014; Wright & Nyberg, 2015).

Climate change is then further explored specifically in the context of the Solomon Islands, examining some of the climate science as it relates to the Solomon Islands and the expected impacts climate change will have on ecosystems, which is especially relevant due to subsistence lifestyles that are largely reliant on well-functioning ecosystem services. This is important as climate science relating to changes in biophysical processes is often a key justification for interventions.

In exploring the origins of international development and climate change, the rise of international development following World War 2 is outlined as an ambitious post-war economic growth program. The rise of international development and aid saw the normalisation of foreign assistance for countries deemed less economically successful. The

subsequent rise and expansion of Climate Change Adaptation (CCA) programs as a subset of development interventions is linked not just to the progressing development of climate science covered earlier in the chapter, but also as the realisation of a moral imperative that assistance for countries contributing little to creating climate change is required. CCA programs are a more recent evolution of international development in the Pacific from the 1990s and have become more prominent in the new millennium.

CCA responses to the challenge of climate change in the Solomon Islands as expressed through CCA programs are also included in this section. Some key characteristics of CCA programs are outlined to provide background on how they operate, the main organisations involved, and what they seek to achieve. Provincial government and their connection with communities is briefly explored as most CCA programs are reliant on this already existing connection for gaining access to communities. Provincial governments are key stakeholders when CCA programs are implemented and the support of provincial government is an essential relationship to both multilateral and bilateral programs. Provincial governments are also critical advocates for communities seeking to advance their own development aspirations or influence upon CCA programs. Finally, gender considerations of climate change are introduced as the impacts of climate change will be felt unevenly, with women likely to be more negatively disadvantaged than men. This is readily acknowledged by CCA programs and therefore an important element incorporated into CCA programs.

Anthropological approaches to climate change

The issue of climate change intersects with social, cultural, political and environmental processes that are of interest to anthropology (Barnes et al., 2013; 2007; Lazrus, 2012). Anthropologists are uniquely placed to engage with climate change as they have the ability to detect changes that others are not seeing and they can trace how “lives and livelihoods are being ruptured” (Connor, 2016, p. 12; 2007). Climate change involves complex global and local forces that once acknowledged make it difficult to isolate from other historical and contextual factors (Magistro & Roncoli, 2001). While compiling this research, no anthropological research could be located relating to culture in the Solomon Islands and CCA programs, and certainly none relating to the cultural influence of programs through

perceptions and relationships. Therefore the literature drawn on here is often from a broader body of literature relevant to the context of this research and not just from anthropological research.

Anthropogenic climate change as an existential threat

This section provides an overview of the phenomenon of climate change as viewed through the evolution of Western climate science. This is important, as the science of climate change is often considered a basis for many of the actions that make up CCA programs, and an influencer of the worldviews of individuals involved in CCA programs.

Anthropogenic climate change represents one of the clear challenges of our times (Rosenzweig & Neofotis, 2013; Tryjanowski et al., 2008). Not only does it pose a herculean challenge to the very natural systems that support the existence of humans and other non-human species on the planet, but it also challenges existing cultural and economic paradigms that are dependent on relatively stable climatic conditions.

The size of the climate change challenge seems to grow with the increasingly dire warnings from around the world. For instance, extreme record warm temperatures in Australia from 2013 to 2017 represent the hottest five-year period ever recorded (Steffen, Martin, & Alexander, 2018). In the Arctic, there is evidence to show that sea ice now freezes 6 days later in the last 13 years compared with the previous 19, with the melt season expected to lengthen as the Arctic warms (Stroeve, Markus, Boisvert, Miller, & Barrett, 2014). In New Zealand, sea levels are estimated to rise 65 cm by 2100 compared to 2005 levels, with satellite data showing acceleration of sea-level rise over past 25 years (Nerem et al., 2018). Despite ongoing persistent claims to the contrary, Western empirical environmental science paints a clear picture that anthropogenic climate change is leading to a rate of planetary warming that is unprecedented (Hamilton, 2010).

Anthropogenic climate change was first discovered by early scientists such as Joseph Fourier (1768 -1830), Svante Arrhenius (1859 - 1927) and John Tyndall (1820-1893) who all contributed to the discovery that greenhouse gases released by burning fossil fuels can lead to a warming atmosphere (Mann & Ebooks, 2012). Arrhenius carried out the first calculations of the possible effects, suggesting global air temperatures could rise by as much as nine

degrees if there was a doubling of atmospheric carbon dioxide compared to preindustrial levels (McKibben, 1989; Weart, 2003). However, it would not be until 1957 that modern scientists began to recognise this as a significant threat to the planet, with Revelle and Suess in 1957 concluding that CO₂ produced by humanity will not be readily absorbed by the oceans, an early indication that the Earth's biosphere has limits (McKibben, 1989; Revelle & Suess, 1957; Weart, 2003). A general convergence amongst climate scientists occurred in the late 1970s, particularly in the USA, that global warming was the biggest human created risk to the planet (Weart, 2003).

Things rapidly changed in the late 1970s and early 1980s with the emergence of neoliberalism and a rise of political conservatism sceptical of human-influenced climate change (Hamilton, 2010; Weart, 2003). Since the establishment of the IPCC in 1988 and subsequent 1995 pronouncement that climate change was dangerous and attributable to humans, scientists have been increasingly highlighting the possible impacts to humanity and Earth's biological systems that this presents (IPCC, 2018; Klein, 2014; McKibben, 2009; Weart, 2003). Although many climate scientists suggest that the impacts will only accelerate over time if emissions are not cut drastically to avoid a 1.5 degree temperature rise (IPCC, 2018; Steffen, 2018).

Professor Will Steffen, in a presentation at the Pacific Climate Change Conference in Wellington in early 2018, highlighted many possible tipping points where formerly stable biophysical processes could change in unpredictable ways and argued these tipping points could be reached without significant decrease in emission (Steffen, 2018). This change towards increasingly dire predictions has seen changes in the language used to discuss climate change. The concept of tipping points, first used by climate scientist James Hansen (2005) and once thought to unnecessarily catastrophize the impacts of climate change, has now become an acceptable term to use in climate change discourse (Russill & Nyssa, 2009).

This realisation of a creeping global catastrophe has been championed by many as a clarion call for changes to be made across politics, economics and culture to address power imbalances and inequities of Western neoliberal economic and political hegemony that have played a role in creating the current climate crisis (Klein, 2014). Climate change along with a small number of issues such as nuclear proliferation are often considered the few truly global threats to countries throughout the world, and although the extent that climate change is felt may vary; irrespective of politics, wealth or location, it will have some impact everywhere on

the planet. Polarised views on climate change science are mirrored by different perceptions on approaches to address it, with the neoliberal or market based responses being used to promote advancement of technology that will, at some point in the future, provide solutions to curbing or sequestering emissions (Wright & Nyberg, 2015). These approaches contrast glaringly with those that infer a 'powering down' and re-localising using low-tech or appropriate tech solutions, an approach that is directly oppositional to a continuous economic growth neoliberal economic system (Heinberg, 2007).

Government and business responses to climate change

This section provides some exploration of the responses that are being provided to climate change in the context of Australia and New Zealand. While culturally different to the Solomon Islands, it provides examples of what countries and businesses in developed nations in the Pacific are currently doing to address climate change. It demonstrates how solutions to climate change are predominantly orientated towards market based responses. The influence of market based ideology is also expressed through the shape and form of CCA programs, demonstrated later in this research.

Solutions to climate change are often sought through the intervention or innovation of business – although business elites have been slow in acknowledging the significance of the issue and even slower to respond. While rapid change in climate poses a number of threats to corporate elites and existing economic and political paradigms, many powerful industries have actively sought to ensure pervasive free market thinking is not radically curtailed through regulation or other means (Klein, 2014; Wright & Nyberg, 2015).

However, some corporates do appear to be taking belated action on climate change. Mike Bennetts, the chief executive officer of Z Energy, publicly acknowledges climate change as an issue and is directing the company towards development of biodiesel plant and conversion of the Z Energy vehicle fleet from petrol to hybrid vehicles, as well as contributions from the sale of fuel going towards the Trees that Count program (Greive, 2018). Air New Zealand is also supporting action on climate change, seeking to reduce greenhouse gas emissions of its fleet and through funding Antarctic Research (Air New Zealand, 2019). However, while there is some movement by corporations in the face of limited state regulatory action, some political and industry leaders continue to pursue economic

development pathways utilising unsustainable development actions, such as the continued global expansion of fracking due to a decrease in conventional fossil fuel sources and continuing extraction of coal such as the Carmichael coal mine in Australia (Short & Szolucha, 2016; The Guardian, 2019).

A rise in nationalistic sentiment corresponds not only to a rising opposition to educated elites in the United States of America, Australia and parts of Europe, but also resulting reductions in foreign aid budgets, weakening of environmental regulations and a distrust of climate scientists (Forchtner & Kølvrå, 2015). Even in the face of these challenges, civic society and political figures nationally and internationally continue to push for tangible action to reduce emissions. Occasionally this continued agitation results in bold action such as the New Zealand Labour-led coalition government banning new oil exploration (Radio New Zealand, 2019b).

Former Solomon Islands Prime Minister, Ricky Nelson Houenipwela recently said at the United Nations General Assembly that climate change is the “greatest threat facing humankind” (UNDP, 2018c 9.32 mins). Recently New Zealand’s Prime Minister Jacinda Ardern called the issue of climate change as the “nuclear-free moment of my generation” prior to the government announcing the ban on future offshore oil and gas exploration in New Zealand (Davison, 2018).

Attempts to establish international agreements that reduce global emissions have been slow-moving with critics often regarding the outcomes of international conferences as either not bold enough in what they seek to achieve or not enforceable enough in ensuring compliance to some minimum criteria that will result in a meaningful decline in emissions (Mason, Polasky, & Tarui, 2017). Despite the perceived slow progress surrounding international agreements to reduce emissions, there is still a diverse array of actions taking place globally to address climate change. Over the past 30+ years, while neoliberalism has been the dominant economic ideology, there has been a focus on market based responses; however, it is increasingly acknowledged that rebuilding the ability of nation states to control the worst excesses of the free market is critical towards creating the necessary policy and legislative framework for individual countries (Klein, 2014). The Paris Accord which entered into force on the 4th November 2016 is generally considered a progressive agreement with the aim of “Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-

industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change” (Ministry for the Environment, 2018; Secretary General of the United Nations, 2016, p. 3).

One of the important mechanisms of the Paris Accord is the principle that developed countries of the world will provide assistance to the developing countries of the world who are less responsible for majority of the world’s emissions. This intention is highlighted by Article 7.

Article 7. 2. Parties recognize that adaptation is a global challenge faced by all with local, subnational, national, regional and international dimensions, and that it is a key component of and makes a contribution to the long-term global response to climate change to protect people, livelihoods and ecosystems, taking into account the urgent and immediate needs of those developing country Parties that are particularly vulnerable to the adverse effects of climate change (Secretary General of the United Nations, 2016, p. 9).

Forms such assistance can take include overseas development aid by regional, bilateral or multilateral sources, with financial support provided in the forms of loans or grants. An example is the Green Climate Fund established in 2010 and supported by 194 countries who are signatories to the United Nations Framework Convention on Climate Change (UNFCCC). It is intended to help developing countries that are particularly vulnerable and to support a paradigm shift to low-emission and climate-resilient development (Green Climate Fund, 2018). Many Pacific Island countries (PICs) such as Vanuatu, Tonga, Kiribati, Tuvalu and the Solomon Islands require significant support as they are vulnerable to the worst effects of climate change due to economic vulnerability, geography and relative institutional weakness (Jackson, McNamara, & Witt, 2017).

Climate change as a Solomon Island development challenge

This section explores the growing awareness of climate change as a development risk in the Solomon Islands. Disaster Risk Reduction (DRR) has had a longer history than CCA has as natural disasters have been a constant threat to lifestyles and development – so international development and aid donors have tended to focus on these. Climate change as it relates to the Solomon Islands is explored as well as impacts on ecological systems important to rural life and cultural identity.

Compared to DRR, the recognition of climate change as a sustainable development challenge does not have a long history. The origins of DRR can be traced to the 1970s when it was first widely recognised that natural disasters could compromise sustainable economic development through increasing human vulnerability. In the 1990s, DRR became widely acknowledged as having policy and planning implications, encouraging movement beyond a hazard-centric perspective towards an understanding that disasters have complex root causes that involve dynamic pressures and natural hazards (Oliver-Smith, 2016, p. 74).

In the Solomon Islands climate change began to be acknowledged as significant as other natural hazards from the early 2000s onwards. This relatively recent elevation of climate change alongside other natural hazards is likely due to global climate science becoming clearer and the effects of climate change becoming increasingly felt (Saunders et al., 2016). Although now under significant stress, Solomon Islands ecosystems have hitherto been considered relatively intact (Geoff Lipsett-Moore, 2010), creating an impression of existing ecological resilience. However, there has been growing awareness of the reliance of rural Solomon Islanders on ecosystem services (i.e. provisioning of food, regulation of climate or cultural practices) in their daily lives (Albert, Albert, Olds, Cruz-Trinidad, & Schwarz, 2015; Kenter, Hyde, Christie, & Fazey, 2011). Important coastal ecosystems, including mangrove ecosystems which are important breeding grounds for fish, and timber resources are at risk alongside reef fish populations which are a major protein source (Dey, Gosh, Valmonte-Santos, Rosegrant, & Chen, 2016). With fish being the main source of protein consumed, this poses a significant food security concern.

Changing climatic conditions could also affect survival of commercial tree species as temperatures climb and rainfall increases (Booth & Jovanovic, 2014; Taylor & Kumar, 2016). Concern is frequently expressed by individuals about increasing difficulties in growing certain food crops due to changing rainfall patterns and temperature increases. Other impacts of climate change are anticipated to be fewer but more intense, e.g. cyclones. Sea levels are expected to continue to rise, extreme rainfall events are expected to become more frequent and intense ocean acidification is expected to increase, impacting the health of coral reefs (Wickham, Clarke, Yee, & Pauku, 2012). Climate change intensification not only has impacts on ecosystems but also on existing rural village infrastructure, atoll islands, lowland coastal areas and urban areas (Talo, 2008).

International development and climate change nexus

In this section, the nexus between the evolution of international development and its emergence into climate change interventions is explored. The evolution of outward looking approaches of international donor interventions after the Second World War that initially focused on economic growth and then progressed towards sustainable development are explored.

International development and aid programs which are familiar today originated in post-war relief and reconstruction that occurred as countries sought to rebuild damaged infrastructure and global commerce after the Second World War, with investments made by large nations such as the United States of America (USA), seeking to kick-start the global economy into recovery (Browne, 2006; Edelman & Haugerud, 2005). An example of this was the Marshall Plan reconstruction strategy by the USA which from 1948 invested US\$13 billion over about 4 years for Western European Countries (Browne, 2006). Harry Truman, president at the time, considered aid to be critical not only from a point of enlightened self-interest but also for economic growth when he stated that:

More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat to both them and to more prosperous areas. For the first time in history, humanity possesses the knowledge and skill to relieve the suffering of these people (US President Harry Truman, 1949, Quoted in Browne, 2006, p. 15).

The post-war period saw both the Soviet Union and the United States compete for influence through the use of aid, contributing to growing tensions during the cold war. National aid interests differed greatly. For France, the interest was investing in former colonies and the expatriate French working there. For Japan, due to the absence of a large military power, they utilised development to advance their political and economic agenda (Mandelbaum, 2003).

Browne (2006) recognises three phases in the development in modern aid. Firstly, the period from the 1950s to the early 1970s saw foreign aid encouraging developing countries to do as developed countries had already done, becoming successful through export earnings, capital growth and developing a skilled workforce. The 1970s and 1980s saw the imperative of economic growth in development questioned, with the sustainability of growth and the natural resources required to fuel economic growth coming under increasing scrutiny. The

1990s saw the decline of the East vs West geopolitical divisions, with the breaking up of the Soviet Union, China becoming more open to the outside world, and the fall of the Berlin Wall. This led to a global focus less about former geopolitical divisions and more towards neoliberal market democracies and a growing influence of neoliberalism in development (Mosse, 2013, p. 236). During this period the focus of donors moved towards good governance with the belief that good governance would lead to good economic outcomes (Browne, 2006). At the same time there was a push towards the global harmonisation of aid, seeking more targeted aid globally that addressed the Millennium Development Goals, meaning that small scale projects became less popular, with resources directed towards policy and higher level capacity development (Mosse, 2013). Nevertheless, Mosse (2005) notes gaps between development policy and the delivery of services on the ground for intended recipients, with aspirational policy on occasion not being effectively translated to significant or lasting change on the ground.

Climate change as a development consideration has its origins from the 1990s when climate change began to be considered an urgent issue impacting on Pacific Island countries. Interventions such as the adoption of REDD+⁹ in the mid to late 2000s in Papua New Guinea as a carbon-offset scheme showed an increasing urgency to provide mitigation and adaptation measures (Bosip, 2012). Organisations such as the Asian Development Bank through their Pacific Department provided mitigation efforts since the middle of the 1990s and included adaptation into its portfolio in 2003 (Asian Development Bank & Asian Development, 2009).

The origins and emergence of climate change adaptation

This section covers the rise of climate change adaptation and mitigation and the various forms CCA responses can take. It also looks at the rise in prominence of climate change adaptation at the international level and briefly at its presence in the Solomon Islands.

Responses to climate change in the Pacific largely focus on two areas: mitigation and adaptation. Mitigation relates to actions which limit the release of greenhouse gas emissions

⁹ REDD+ stands for 'reducing emissions from deforestation and forest degradation'. The plus refers to the added biodiversity and cultural benefits.

(Ford & Berrang-Ford, 2011; Füssel & Klein, 2006). Climate change adaptation refers to an approach of providing climate change solutions through adapting to what is already occurring or will occur in future, or to attain any benefits arising from climate change (Barnett, 2010; Climate Change Adaptation Technical Working Group, 2017). Climate Change Adaptation as inferred in the name, is a process that is continuous and ongoing as society seeks to respond to climatic changes (Ebinger, Vergara, & World, 2011). It is often considered a technical challenge to be viewed and resolved through technical knowledge, with less consideration given to the complex social and cultural factors that are operating (Barnett, 2010). While mitigation receives more attention internationally through ongoing international climate change negotiations and reports on rising global emissions, amongst Small Island Developing States (SIDS) in the Pacific, adaptation has a higher profile. The rationale for this is twofold. Firstly, SIDS in the Pacific Islands are low emitters of greenhouse gases compared with other more developed nations and secondly, they are more exposed than larger developed nations to the impacts of climate change due to a number of environmental, social, economic and governance factors restricting their ability to implement adaptation strategies (Betzold, 2016).

Adaptation can take many varied forms. Examples of this include risk governance (Selby, 2016), building adaptive capacity in ecological systems through ecosystem based adaptation (Nalau, Becken, & Mackey, 2018; Seddon), improving the adaptive capacity of infrastructure through improving planning processes and resilience of developments (Klinenberg, 2016) and increasing individual or community capacity (Kais & Islam, 2016). Sectoral focus to adaptation is often employed and certainly this was the case in the Solomon Islands. Examples of some sectorial responses include the agricultural sector's efforts to increase production, build resilience and reduce emissions (Sutton, Srivastava, & Neumann, 2013). In the forestry sector, it involves increasing species diversity to provide resilience in the face extreme weather events (Keskitalo et al., 2016). In health, it involves addressing the impact extreme temperatures may have on elderly and other vulnerable people (Paterson et al., 2012). In the energy sector, an example is behavioural, structural and technological adjustments to ensure systems are not affected by acute changes such as flooding or long-term changes such as warming air temperatures, which will reduce the efficiency of power generation (Ballard, 2015; Ebinger et al., 2011).

Climate Change Adaption emerged as part of a wider public discourse at the Rio Earth Summit in 1992 which referenced the United Nations Framework Convention on Climate Change (1992). This convention sets out that climate change adaptation and abatement (mitigation) of human-created climate change are both necessary to address climate change (OECD, 2009; Otto-Zimmermann, 2011; United Nations, 1992). After this was the emergence of what is referred to as the 'adaptation scene' which was the normalisation of adaptation alongside mitigation as both equally essential elements of responses to climate change (Otto-Zimmermann, 2011). However, it was not until the early 2000s that climate change adaptation truly began to share the prominence of mitigation, with some initial reluctance to engage with the concept with it being seen as defeatist and taking energy away from efforts to progress mitigation policy and frameworks (Schipper, 2006). Both adaptation and mitigation are considered critical to keep global temperature rises below 1.5 degrees, with researchers arguing that above 1.5 degree adaptation efforts will be much more costly and environmental impacts will be much more significant (Ford & Berrang-Ford, 2011; Travis, Smith, & Yohe, 2018).

Pacific and Solomon Island CCA and related processes, such as Community Based Disaster Risk Management, have a more recent history compared to other parts of the world (Catford, 2014). The Solomon Islands first ratified the UNFCCC on the 28th December 1994. This was followed by the Pacific Islands Climate Change Assistance Programme, an early climate change program which was operational from 1997 to 2001 (Talo, 2008). In 2006, the Pacific Islands Framework for Action on Climate Change (PIFACC) was compiled by the South Pacific Regional Environment Programme (SPREP) to guide CCA in the Pacific (des Combes, Henstock, Holland, & Iese, 2014). Since this time, numerous other CCA programs have been implemented across a range of sectors, particularly in the post-2000 era, with 46 climate change adaptation and mitigation projects listed in 2015 as either ongoing or recently completed in the Solomon Islands (Ministry of Environment, 2015).

CCA program responses to climate change

This section explores the trends in approaches towards climate change and climate change adaption by donors, initially highlighting assumptions around economic power and

the vulnerability of SIDS. Elaboration is then provided of typical processes and activities associated with CCA programs in the Solomon Islands.

Mainstream climate change discourse in international development often focuses on the inequality of impacts caused by climate change upon wealthy developed nations and those considered less wealthy and therefore less equipped to respond through either adaptation or mitigation responses. Typically, SIDS in the Pacific which are the focus of donor adaption assistance are those least responsible for global emissions (Betzold, 2016). Inequality discourses often champion solutions that result in increased individual monetary wealth and material wellbeing, mirroring broader international development narratives that seek to address wealth inequality through 'sustainable growth' (World Bank Group, 2017). Hence the importance to CCA program donors that least-developed countries, such as the Solomon Islands, mirror the development pathways of influential donor nations.

While climate change is frequently viewed through an economic lens, other assumptions also are applied. Barnett and Campbell (2010) suggest that climate change represents a 'discursive formation' which they define as "a system of statements that has regularity with respect to themes, objects and concepts, and the way they relate to each other" (Foucault, 1972). Some of the defining features they assign to this discursive formation are assumptions relating to scale (large developed countries creating negative impacts on small isolated islands), power (socio-ecological drivers dominating weak local systems) and knowledge (indexes and models forming the basis of decision making). Vink *et al* (2013) also suggest assumptions are significant influencers of program governance due to unknowns of climate science and requiring many policy cycles required before a particular solution can be proven effective.

Assumptions also exist around vulnerabilities of SIDS due to sea level rise, severe rainfall events and increasing cyclonic events exacerbating physical, social, economic, and political vulnerabilities (Foley, 2018; Jackson et al., 2017). However counter to these hegemonic narratives, SIDS have been adept at managing mass media and the UNDP to highlight their plight and gain leverage (Ourbak & Magnan, 2017). Other authors such as Kelman (2010) suggest that SIDS voices have been influential in advocacy through establishing scientific institutions and publishing scientific work relevant to them. The emergence of the term 'large ocean states' also challenges this concept of deficit associated with preconceptions based on the size of terrestrial land mass of these nation states. Other authors

suggest that features that make SIDS vulnerable such as isolation, remoteness and containment can also exist in continental locations (Hay, 2013; UNDP, 2017).

One prominent element of discourse in the Solomon Islands centred on the functional relationships of CCA programs and how they can be better integrated with DRR, risk governance and traditional institutional strengthening. A number of programs, including The Pacific Risk Resilience Programme (PRRP), worked in the area of risk governance to develop more comprehensive framing and clarity, particularly to determine what exactly risk governance is and how this would work in the context of the Solomon Islands (Selby, 2016).

CCA programs in the Solomon Islands were usually implemented over relatively short timeframes with multiple individual projects being implemented as part of the overarching larger program. Individual projects implemented were often devised through the development of a vulnerability assessment or other forms of assessment. Villages would receive notice that a CCA program was about to commence through initial formal approaches by representatives of the CCA program either in person or through letters to community leaders, which would then be followed up by a vulnerability assessment.

Vulnerability assessments may provide information on the physical and economic resources that a community has, such as food security, income and general demographic information. Knowledge about community assets and infrastructure is often in the form of quantitative data and often forms the basis of a vulnerability assessment, but little acknowledgement is given to the role of community power structures and belief systems in influencing relationships between those implementing CCA programs and intended recipients (Mataki, 2013). This 'thin' description can reinforce common assumptions around a benign benevolence within communities, with communities dominated by seemingly naive traditional worldviews and simplified hierarchical governance structures (Cox, 2009; Geertz, 1973).

Perceptions of donors are that if governance systems are resilient then the impacts of climate change are likely to be less disruptive. This has led to the rise of risk governance being a recent priority focus by some CCA programs. While one focus was on improving systems, both governance and bureaucratic, another was the implementation of tangible constructed projects such as infrastructure projects that support community resilience.

Before programs commence, an analysis occurs to assess potential social and cultural risks. Programs are implemented in a small number of provinces with the aim of 'piloting'

certain approaches or systems that can then be more widely implemented. Programs also use comprehensive monitoring and evaluation frameworks, often heavily reliant on quantitative measures of outcomes.

Most CCA programs often have significant outsider influence through the involvement of foreign experts in influential program design, management or technical advisory roles, roles that exist throughout a programs lifespan. The life of these mainly in Honiara based fly-in and fly-out foreign experts from around the world is substantially different to the day-to-day lived realities of those in communities or public sector employees. While consultants and outsiders often have access to comparatively significant wealth and resources, those they are working with often do not have the same resources.

Correspondingly a number of authors draw attention to the importance of adaptation responses being influenced by bottom up responses rather than top down ones that may originate from these same outsiders and decisions on adaptation being made principally at the village level (Barnett & Campbell, 2010; Catford, 2014). Cannon (2008) supports this by suggesting those that cause disasters often have no interest in helping those they harm and therefore community grass roots actions supported by various forms of solidarity is important to challenge this. The role of a multitude of different actors with their own ambitions, preferences and styles of problem framing is also raised by Vink et al (2013).

It is increasingly accepted that an effective response to climate change needs to address political, social and economic systems (Klein, 2014; Wright & Nyberg, 2015). CCA programs as a subset of the larger push to respond to climate change are no different in seeking substantial behavioural and systems change, though they do not generally challenge overriding economic paradigms. There is often reference to the influence of traditional culture and harnessing this for the benefits of CCA programs, but conversely little attention to the culture that accompanies outsiders and insiders engaged with such programs or of the culture that evolves from dialogue and discourse as groups work together. How these engagements alter or reinforce cultural worldviews and power relationships appears little understood, and there is little discussion of what should or could be changed from current approaches. Culture is largely seen as peripheral to programs and when it is considered, 'traditional' practices may be referenced in a patronising way.

There are a number of multilateral and bilateral donors that operate in the Solomon Islands and many are implementing or supporting some form of climate change adaptation

program. These agencies include the World Bank, United Nations Development Program (UNDP), World Vision, Oxfam, SPC (Pacific Community), South Pacific Regional Environment Program (SPREP), GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit). New Zealand, Australia, Japan and the Peoples Republic of China (Taiwan) and a number of other countries also contribute donor aid to the Solomon Islands. Both multilateral and bilateral donor programs are supported by the Solomon Islands government and a small number of local NGOs, such as The Natural Resource Development Foundation (NRDF) who also implement CCA programs. Solomon Islands government initiated programs operate with some level of support from international donor agencies or countries.

The funding contributed to the CCA programs that are the focus of this research is substantial. The UNDP/ Ausaid Pacific Risk Resilience Programme (PRRP) had a budget of over US\$16,100,000 from 2013 to 2018 and was implemented in Fiji, Solomon Islands, Vanuatu and Tonga (Winterford, 2016). In the Solomon Islands, the program was implemented in Guadalcanal and Temotu Provinces. The Work Bank Community Resilience to Climate and Disaster Risk in the Solomon Islands Project (CRISP) had a US\$9.3 million dollar budget, with the program operating from 2014 to 2019 in Temotu and Guadalcanal provinces (Denis Jean-Jacques Jordy). The Choiseul Integrated Climate Change Programme (CHICCHAP) which was implemented in Choiseul 2012 had a budget of at least \$1.5M up till March 2017 (USAID/GIZ, 2018, p. 6).

The area of focus of programs and the specific groups they direct their attention towards varied from program to program. While some sought to strengthen governance at the national level, others looked to develop community-based climate change solutions. The Pacific Risk Resilience Programme (PRRP) worked across three main thematic areas referred to as Processes, People and Mechanisms. What this resulted in for the People category included creating new posts for people to advocate for CCA/DRR. For the Processes category, it include the utilisation of new risk-screening processes; and for Mechanisms category, it included the establishment of new units within government departments to manage certain elements of food security and post-disaster recovery (UNDP, 2016). For CRISP, the program included supporting policy development, strengthening climate and disaster risk information and early warning systems, supporting both structural and non-structural disaster risk and adaptation investments (Denis Jean-Jacques Jordy). The CHICCHAP program brought together a number of different agencies to work collaboratively in Choiseul Province. USAID were a

major funder of this program with money going to SPREP, GIZ and SPC (USAID, 2019). The areas CHICCHAP focused on were strengthening governance structures, livelihoods supported through healthy ecosystems, sustainable economic development, awareness-raising on climate change, food security, appropriate and climate-friendly infrastructure and others.

CCA and provincial government and communities in the Solomon Islands

As most CCA programs are implemented in provincial areas, this section seeks to provide some context of provincial government in the Solomon Islands and the relationships they have with communities. Provincial governments are important stakeholders and central to implementation of CCA activities as they are responsible for a number of delegated government functions linked to resilience and climate change. This therefore makes them important advocates for communities.

Provincial governments are the functional presence of central government in each of nine provinces in the Solomon Islands. They represent the vast majority of the Solomon Islands population of 642,000 people (Solomon Islands National Statistics Office, 2015). In 2009 it was estimated only 102,030 people were urban dwelling – which includes those residing in the capital city Honiara (Government, 2012). With this demographic spread across nine widely-separated provinces it is therefore not surprising that localism is prominent, with a cohesive national identity being elusive (Dinnen & Firth, 2008). The structure of government in the Solomon Islands is a colonial construct from when the country was British Protectorate. Alternative systems of government were proposed that sought to incorporate *Kastom* forms of governance, ultimately a Westminster-style system¹⁰ was preferred and has been functioning since the Solomon Islands became independent in 1978 (Dinnen & Firth, 2008; T. Kabutaulaka, 2015).

Provincial governments perform a number of functions distinct to those of central government, while also providing provincial support and some co-ordination of central government functions such as health, education and agriculture services. They have limited resources of their own, distributed through provincial planning and budgeting processes. Provincial government occupies a unique and fraught role, implementing a colonial

¹⁰ The Westminster system is defined by a strong executive, and an impartial and professional bureaucracy. This is supported by a ministerial roles that clearly define responsibility (Brown-John, 1996; Grube & Howard, 2016; Lijphart, 2012).

governance system while representing diverse communities influenced by strong customary and Christian beliefs. Legislated obligations under the Provincial Government Act (1996) include responsibilities for local business licencing, land and land use, transport, water and electricity supply and a number of other functions.

Communities, however, perceive provincial governments as having a role in fulfilling their developmental aspirations, although the Provincial Government Act does not include clear considerations for strategic planning requirements to facilitate this (Solomon Islands Government, 1996). Certainly, international aid donors approach provincial governments as legitimate policy, planning and implementation focal points for their community's.

Little is written on the experiences and responses of communities involved in CCA programs, but fortunately insight is provided through literature produced by the three CCA programs that were the focus of this research. This literature provides detailed narratives of implemented CCA programs that academic literature is unable to do. It covers program implementation and budgeting, describes program activities that will occur or are proposed to occur, provides details on vulnerabilities and resilience within government and communities, and provides analysis of program findings with an intention of influencing future programs (Denis Jean-Jacques Jordy; UNDP, 2015, 2016; USAID, 2019). In particular Mataka (2013, p. 6) who describes CCA programs in this way:

In order for CCA to be meaningful in Choiseul, it must be planned for and implemented in tandem with the geophysical, socioeconomic, cultural, environmental and political circumstances, as well as with community institutions. These non-climate change factors interact with each other and with climate change impacts to determine the vulnerability of communities to climate change, an acknowledgment that social and cultural dimensions are important.

While provincial government implements policy and plans defined by colonial governance paradigms and a global capitalist influence, communities face a challenge of working within this system while trying maintain distinctive customs and Christian beliefs. One of the key issues that a Westminster system of governance presents is the approach of confrontation rather than of consensus decision making, which is the traditional way in which conflict is resolved (T. T. Kabutaulaka, 2008). Also, politically, CCA is often linked to government ministries that have limited political clout and is often seen as less important

than disaster risk management, making it a difficult to secure adequate provincial government support (UNDP, 2015).

Gendered approaches to climate change in the Solomon Islands

This section highlights how with the influence of climate change, inequalities are manifested by the influence of gender. Gender forms an important consideration for central government, provincial government and CCA programs alike as gender based inequalities are likely to also lead to increased vulnerability.

Women are likely to face different impacts than men; however, it is an oversimplification to say that gender impact is just about women's intrinsic vulnerability, as the more important factors that influence vulnerability include complex social, economic and power relationship factors (Pearse, 2017). Women are most likely to be impacted in areas relating physical and mental health, political involvement, access to the labour market and poverty of time (Djoudi & Brockhaus, 2011). Women face significant barriers for advancement in the Solomon Islands where attitudes towards women are patriarchal, with women having little autonomy and limited political influence (Hermkens, 2013). An example of the situation woman face is demonstrated by gender based violence being considered acceptable by 73% of males (Ming et al., 2016).

In some provinces, land is passed down through the matrilineal line, but in other provinces land is inherited through men. When women have more influence over land this leads to more influence in political areas. However, to solely consider women having influence in relation to land is an oversimplification of roles which are often complex and less homogeneous than often assumed (Demetriades & Esplen, 2008). Women are expected to fulfil obligations of managing the home, children and gardens; while in provincial capitals and Honiara, men work for salaries. In Malatia and Temotu province woman have important roles of resolving conflicts and keeping the peace (Greener, Fish, & Tekulu, 2011).

Waterborne disease is likely to affect women and girls disproportionately. With limited access to economic means due to discrimination and underemployment, they are less likely to access institutional or medicinal healthcare solutions (Demetriades & Esplen, 2008). Climate change can exacerbate existing inequalities between and among women as women

are likely to be competing for access to natural resources impacted by climate change, while the gendered experiences of poverty such as those mentioned above are likely to also intensify (Demetriades & Esplen, 2008). In recognition of these factors, the PRRP program concluded that holistic mainstreaming of risk into policy and planning requires the inclusion of gender, as previously risk (including gender considerations) sat outside of climate change activities (Selby, 2016).

Conclusion

Climate change is conceptualised largely based on Western science and this is what frames many CCA approaches in the Solomon Islands. As climate change is relatively complex and intersects many fields of human interest, it makes it well suited to being researched by anthropologists.

Humanity's ability to influence the planet's climate has been recognised for a considerable period of time with significant progression in the science from the 1950s to the 1970s. This growing body of knowledge now suggests that unless significant action is taken then the impacts are likely to be severe, with humanity and biological systems facing a bleak future. The challenge of climate change also poses a threat to the current economic, political and social systems. However, in the face of such dire warnings, governments around the world have stepped up action to endorse global agreements for action such as the Paris Accord, with the ambition of keeping temperatures below 1.5 degrees.

Mitigation actions at the international level run parallel to a growing set of multilateral and bilateral supporting actions in PICs. However, adaptation is often delivered by CCA programs specifically established to deploy interventions usually in the form of individual projects. CCA programs often use distinctive methods of operating and implementing; they are generally also well-resourced and utilise specialist expertise. The 3 CCA programs that are part of this research all had significant resources supplied by foreign donors such as GIZ, UNDP/Ausaid and the World Bank.

While the environment that programs operated in was still reasonably ecologically intact, a growing realisation has been that ecosystems are under pressure from climate change and that any impacts on ecosystems will have a wide-reaching impact on the livelihoods and also culture within the Solomon Islands. Coastal ecosystems in particular are

likely to be significantly impacted, especially food resources. The impacts of changing weather patterns on food crops, eroding shorelines and increasingly unpredictable weather are all elements of climate change commonly discussed by those living in rural communities, influencing the lived everyday realities of Solomon Islanders.

Both provincial and central government play a crucial role in advocating for the aspirations of communities within a province and ensuring that wherever possible those aspirations are incorporated within climate change programs. However, the interface between national government, provincial government and donor programs is a complex space in which communities are required to engage, heavily influenced by a Westminster system of government that dominates 'traditional' or locally relevant forms of governance. Further to this is the complexities provincial governments and CCA programs face in ensuring gender equality, as climate change will be exacerbated inequalities which will lead to further vulnerability.

Chapter 3

Methodology and Methods

Introduction

In this chapter, I outline the methodology and methods used for this research. The first part of the chapter shows the research location in the Solomon Islands and the two main field sites. Following on from this I explore the data collection methods used. Data sources included a comprehensive literature survey, semi-structured interviews and semi-ethnographic observations. This utilisation of a diverse array of data sources allowed for a more comprehensive exploration of the research topic and provides contextualisation. The chapter then details how participants were selected and participated in the research. It provides an outline of the participants including their background. The final part of the chapter explores the thematic analysis method used for data analysis. It outlines the process of transcription and the subsequent extraction of thematic data from the semi-structured interviews for further analysis. The ethical issues that were presented by this research are also explored in detail.

Research location

Two study sites were chosen within the Solomon Islands for this research. The primary site was in Honiara, where the Community Resilience to Climate and Disaster Risk Project (CRISP) for Solomon Islands and Pacific Risk Resilience Program (PRRP) CCA programs had their main office to engage with central government and other stakeholders. The second research site was in Choiseul Province with research conducted primarily at Taro township, where both the CHICCHAP program and Choiseul Provincial Government were based. The two field research locations are included in figure 1.

Figure 1: Map of the Solomon Islands showing research locations in Guadalcanal and Choiseul Province (Source: Nate Peterson/The Nature Conservancy)



Data collection methods

Literature Review

Secondary data was generated through a literature survey that explored areas relevant to climate change adaptation (CCA) programs in the Solomon Islands. The literature survey explored the evolution of climate change adaptation, with literature providing insight into climate change adaptation programs in the Solomon Islands. The literature survey also explored challenges to CCA programs, particularly neoliberal influences, cultural values and belief systems such as traditional ecological knowledge. It then looks at social structures and gender influences that may influence CCA programs. Of particular relevance were perceptions of cultural inadequacy and deficit regarding the Solomon Islands and relevant to CCA. It then concludes by exploring responses and experiences to CCA programs, and the use of communication and language by CCA programs. Publications used included academic research papers books, newspapers, brochures, plans and reports.

Field work

Field research was conducted in the Solomon Islands from the 6th November to the 10th of December 2017. I flew from Australia to the Solomon Islands on the 6th of November 2017. From the 6th until the 22nd of November and the 28th of November to the 10th December, research was focused within Honiara because this is where most donor programs had their main offices as it was conducive to interaction between programs and government. This was particularly true for the CRISP and PRRP programs which both had their main presence there. However, a short field trip to Choiseul Province took place between the 22nd and the 28th of November as Choiseul was the focal province and main project office of the CHICCHAP program.

Field notes were taken when carrying out one-on-one interviews, recording other observations or conducting informal interviews. These were initially handwritten into a field notebook and then transferred onto a laptop computer. As the field research progressed, daily notes were directly entered onto the laptop computer at the end of each day rather than first being written by hand. Field notes were kept up to date to ensure accuracy of observations and so daily observations reflected immediate responses to daily experiences. Most frequently this related to whatever conversations had occurred during the day, but could include notes on almost any observation or conversation related to culture or *kastom*, interpersonal interactions or environmental issues.

Semi-structured Interviews

17 individual interviews occurred in total, and of these 15 were conducted in the Solomon Islands and 2 were conducted in Brisbane.

The semi-structured interviews covered six distinct areas:

- 1) Participant backgrounds, including education and cultural background as well as initial thoughts about CCA and the engagement process.
- 2) The treatment of participants of CCA programs and how people perceived they were treated.

- 3) Integration and alignment of priorities of the various groups and the level of coherence between built infrastructure priorities and other organisational priorities. Also questions on alignment of participants worldviews in relation to the aims and principles of the CCA programs.
- 4) Participants' experiences of the social, political and environmental contexts while involved with CCA programs.
- 5) Relationships and communication during implementation between stakeholders was also explored to better understand what was occurring during the various stages of the project.
- 6) Observations by participants of climate change to get a better picture of how climate change influenced participants' perceptions of their lived environment and relationships between stakeholders.

Ethnographic participant observation

A semi-ethnographic research approach with a case study element was a response to observing research projects over a number of years in the Solomon Islands that only utilised positivist and quantitative approaches. This was particularly true in short-term research by foreign consultants in areas such as gender violence, governance, policing or infrastructure (Foukona & Timmer, 2016). Substantial positivist and quantitative research also has been carried out by indigenous Solomon Islanders in areas of natural sciences (ecology, marine forestry), educational and medical science. Therefore, the detailed interpretation that can be achieved through a semi-ethnographic approach allows for the developing a 'thick' description as described (Geertz, 1973). This 'thick' description is important in developing a deeper understanding of perceptions and relationships between stakeholders and possible implications these have for CCA programs. A semi-ethnographic approach assisted with this as it can be supported by a family of other methods, in this situation it was a case study approach (O'Reilly, 2005). This approach is heavily constructivist, as it accepts reality is multiple, constructed and holistic (Teddlie & Tashakkori, 2009). However due to the time constraints of a short field research period and heavy reliance on semi-structured interviews, this research cannot be considered fully ethnographic in its approach and therefore is considered semi-ethnographic.

Participant observation provided supporting data for the semi-structured interviews. The expectation before research commenced was there would be a number of interactions between CCA programs and stakeholders in workshops and meetings, providing opportunities for participant observation. However, there was only a single event on the 4th December 2017 as part of a carbon trading workshop where participant observation could be used for this type of engagement. General engagement with research participants throughout the research offered further opportunities for participant observations. My own fluency in Solomon Islands Pidgin English helped a lot in my engagement with the local community.

While in Brisbane between the 4th and 6th November 2017, I attended an event called 'Nature's Leading Women', an event organised by the Nature Conservancy that sought to empower five indigenous women's groups from across the Pacific and Australia to develop projects that would advance their wellbeing and their communities (Nature Conservancy, 2017). This provided an opportunity to gain an insight into gender-related issues in development and also experiences of the donor and recipient interface.

My participant observation approach was based on the ethnographic work of Ian Hogbin, an anthropologist who carried out research in the Solomon Islands, who described his approach thus:

At first I used regular informants conversing in pidgin and gradually substituting more and more of the native language. Then after a time I began taking part in native life and listening to ordinary talk in houses and gardens. The framework of the culture comes from the informants, but I learnt of its workings by direct observation (Hogbin, 1939, p. 20).

Case study approach

While this research was semi-ethnographic, it also employed a case study approach that focused on three Solomon Islands based CCA programs that were a core focus of this research. The case study approach that has been utilised in this instance is referred to as the collective approach. Crowe et al. (2011, p. 2) stated the following regarding this particular approach "The collective case study involves studying multiple cases simultaneously or sequentially in an attempt to generate a still broader appreciation of a particular issue". Woodside is also

informative, “The defining feature of Case Study Research (CSR) lies in the supreme importance placed by the researcher on acquiring data resulting in describing, understanding, predicting and/or controlling the individual case” (Woodside, 2016, p. 3). The case in this instance being the three CCA programs. The case study approach can also be integrated into the ethnographic approach as it allows for “studying at first-hand what people do and say in particular contexts” and includes lengthy contact with the group that is part of the study while also using relatively open ended questions (Hammersley, 2006, p. 4). Chicago school sociologists often combined ‘case study’ with ethnographic work they carried out (Hammersley, 2006, p. 3), so precedent exists integration of the two approaches. This is supported by O'Reilly (2005, p. 3) who states minimum requirements of an ethnographic study includes “Involving direct and sustained contact with human agents”.

Participant recruitment

Interview recruitment

As mentioned earlier, in total 17 individuals were interviewed all of whom had been closely involved with CCA programs in the Solomon Islands. These included individuals who worked as temporary international contactors (2), temporary local contractors (2), and permanently employed (7). There was, however, a gender imbalance towards males (9) in relation to female participants (2). This was a reflection of the gender imbalance in the workforce. Participants were both foreign nationals (5) and indigenous Solomon Islanders (6). Employment affiliations included the Solomon Islands national government (2) and provincial government (2), NGO (2), climate change adaptation programs (4) and diplomatic organisation (1).

The research sought participants who had been involved in three prominent CCA programs. These were the Pacific Risk Resilience Programme/PRRP (UNDP), the Community Resilience to Climate and Disaster Risk Project for Solomon Islands/CRISP (World Bank), and the Choiseul Integrated Climate Change Program/CHICCHAP (GIZ/SPC and others). The World Bank program commenced in 2014 and will conclude in 2019, while the UNDP's PRRP commenced in 2014 and it appeared that its in-country presence had concluded by the time I arrived in late 2017, while still being managed externally from Fiji. The CHICHAAP program was still active while the research occurred, although the substantive SPC/GIZ component was

about to cease. The CHICCHAP program was expected to continue without substantive financial support of the major donors.

Participants who were selected had association with one of these programs in the roles outlined in Table 1. They were also selected as they either had significant involvement with operating programs or recollections relating to programs no longer operating. Only a small number of participants were recruited through snowball recruitment. These participants were those whom I had no previous connection, but who had substantive engagement with programs through positions within a program or through work in central or provincial government.

Semi-structured Interview process

Semi-structured and one-on-one interviews were chosen as they are likely to provide more information than conversations that are conducted remotely (Irvine, Drew, & Sainsbury, 2013). Semi-structured interviews also allowed room for exploration of participant narratives while maintaining links with theoretical constructs (Galletta & Cross, 2013). While most interviews were conducted in English, a number were conducted in Solomon Island Pijin English. As a result, a small number of recorded interviews contained occasional use of Pijin English. These interviews were transcribed professionally with the Pijin English highlighted by the contracted transcriber and transcribed by myself at a later date as I have a well-developed comprehension of Pijin English, so transcriptions should be representative of the original conversations that were had between myself and the participants.

Daily field notes and informal interview notes were also transferred to Word documents. Interviews ranged in length from 33 minutes to almost 2 hours in length, though the aim was to keep them under 1 hour where possible so participants were not fatigued. Interviews were recorded with a Sony ICD-PX470 audio recorder during one-on-one interview, with the interviews transferred through a USB connection to an Asus laptop computer.

Participant responses followed one of three different response styles, which are outlined below:

- 1) Tailored Responses – A small number of respondents responded to questions in a manner that suggested they had already developed some concept of the scope of the

research, presumably based on initial conversations or information sheets provided. Respondents also appeared to tailor their responses as interviews proceeded to what they perceived to be a desirable answer that intentionally painted climate change programs in a positive light. Interviews were not overly directed but when it was clear that an interview strayed significantly from the original interview questions then I would bring the interview back to the questions by either reiterating a question or elaborating on it to provide more detail. Often this would be in Solomon Island Pijin English.

2) Reluctant Respondents – A small number of participants were guarded when it came to engaging in interviews about CCA. There are likely to be many reasons why individuals may have been reluctant to respond, one possibility is that negative responses could jeopardise future relationships, particularly employment or perceptions of that person as leader or team member. It may also have been possible that they felt intimidated by the interview process. These individuals responded to subtle encouragement provided in the form of reverting to Pijin English or rephrasing the question to be comprehensible. Ordinarily I tended not to be forceful in the interview process and accepted whatever response was provided.

3) Confident Respondents – This category of interview participants were those that responded freely when interviewed and provided substantive responses with minimal intervention. These respondents were confident in providing their observations of CCA programs and reflection on their own involvement. While some of these participants would have been those mentioned in point 1, they all shared the capacity for covering significant ground and frequently offered unique insights while responding to the interview questions. Those participants who provided less guarded responses and were more explicit in their personal views and beliefs about individual programs, organisations or people, and were generally those who did not reside in the Solomon Islands or had more secure employment.

Participant affiliations

Due to the need to respect the confidentiality of research participants, their names have been substituted with pseudonyms.

Table 1: List of semi-structured interview participants (pseudonyms used for all participants)

Name:	Employment Affiliation:	Nationality:	Gender:
Jane	CCA program	Solomon Islands	F
Simon	Diplomatic organisation	New Zealand	M
Peter	International NGO	New Zealand	M
Robert	Solomon Islands government staff	Solomon Islands	M
Max	CCA program	European	M
Paul	Provincial government	Solomon Islands	M
Steven	Solomon Islands government staff	Solomon Islands	M
Rebecca	International NGO	Australia	F
Matthew	CCA program	New Zealand	M
Abel	Provincial government	Solomon Islands	M
Adam	CCA program	Solomon Islands	M

Data analysis methods

Thematic Analysis

Thematic analysis was used for data analysis due to its flexibility in categorising emerging themes that were consistently expressed, often in slightly varying forms across participants. In the context of this research, use of thematic analysis was guided by Braun and Clarke (2006), who define thematic analysis as “a method for identifying, analysing and

reporting patterns (themes) within data. It minimally organises and describes your data set in (rich) detail” (Braun & Clarke, 2006, p. 79). Thematic analysis to Fereday and Muir-Cochrane (2006, p. 4), “...is a form of pattern recognition within the data, where emerging themes become the categories for analysis”. This research follows an inductive thematic analysis process that is ‘bottom up’ rather than ‘top down’, meaning the data leads the creation and identification of themes rather than trying to fit data into existing analytic preconceptions or coding frames (Braun & Clarke, 2006, p. 83).

Transcription

All one-on-one semi-structured interviews were recorded with a small audio recorder then downloaded onto a laptop. These audio recordings were eventually uploaded to Express Scribe software for further transcription. Once transcribed, all recorded data was entered into Nvivo 12 plus and then coded. Some interviews were transcribed by a contracted specialist then reviewed to ensure accuracy. Eleven of 17 one-on-one interviews were fully transcribed. Five of those were transcribed by myself while 6 were transcribed by a contracted transcription professional. Interviews were transcribed to produce intelligent verbatim transcripts suitable for Thematic Analysis. Intelligent verbatim transcription allowed for assigning selected parts of responses into key thematic categories upon review. This interview data along with daily field notes and informal interview notes were uploaded into Nvivo 12 Plus, for coding of key themes.

As specific themes emerged, the section of text embodying a given theme was coded and linked to that theme. Typically coded material was as short as a single sentence but could be 1 or 2 paragraphs in length. Initially 21 thematic categories were created, but with further analysis this was reduced to 13 themes and incorporated within this thesis as they had significant rich content or a sizable data set. This data analysis process followed the 6 stages that are outlined by Braun and Clarke (2006, p. 87). These stages are 1) Becoming familiar with the data, 2) Generating initial codes, 3) Searching for themes, 4) Reviewing the themes, 5) Defining and naming themes, 6) Producing the report.

Ethics and ethical issues

Ethnographic research into contemporary issues has occurred infrequently in the Solomon Islands. Historical justifications exist for this, and it is not uncommon to encounter resentment and suspicion towards outsider researchers, particularly those looking to carry out ethnographic research. This may relate to the not too distant past when anthropological researchers removed cultural artefacts and appropriated traditional knowledge and then utilised these resources to build their own or their institution's standing in the world of science and academia. This usually meant little further acknowledgment of the original owners. Anthropologists may also have been seen as extensions of the colonial government, providing knowledge of particular indigenous groups to further government agendas (Asad, 1979).

An example of this mistrust was displayed towards researchers between 2010 and 2012 by an individual associated with the Lauru Land Conference of Tribal Communities who would often approach foreign researchers and seek to restrict their research efforts in the province by suggesting approval by the Lauru Land Conference of Tribal Communities was required before research could commence. At the time, this attitude towards outsider researchers was shared widely, along with the belief that research within the province should be carried out only by local people. This pre-existing attitude towards anthropological researchers meant a level of mistrust existed and needed to be taken into consideration.

Information sheets and consent forms were provided to all participants before research commenced. The information sheet outlined what the research involved, conditions of participation, the option to pull out, as well as contact details of my supervisor if more information was required. Participants signed consent forms if they accepted the conditions. It was important that participants were treated with respect as part of this research. This meant ensuring adequate advanced warning of when interviews were to be conducted, with information sheets and consent forms also supplied in advance so participants had adequate information on what was required of them.

It was also important for interviews to be carried out in locations with adequate privacy. This allowed participants the freedom to speak freely without fear of repercussions. Explicit criticism of others in the Solomon Islands is relatively uncommon, and strongly expressed opinions can also impact upon an individual's standing in the community or a peer

group's relationship with that individual. If individuals made strong statements or critical comments about people or organisations during the interview process and these were to become public it could cause them mental or emotional stress. This is why confidentiality was particularly important. Interview locations were also comfortable, quiet and cool as the hot and humid climate of the Solomon Islands can have a significant influence on engagement.

A copy of their interview transcription was sent back to the research participants for their information and to ensure they were happy with the contents of the interviews that were likely to be included in the data analysis. No responses were received back from any of the research participants that indicated they did not want their interview responses included, nor any indications that interview transcriptions were inaccurate.

Chapter 4

Critical factors influencing climate change adaptation

– A review of the literature

Introduction

This chapter begins with an exploration of literature on Climate Change Adaptation (CCA) in the Pacific. It then provides an analysis of literature associated with the main themes that emerged.

Climate change is commonly referred to as a 'cross-cutting issue' in the Solomon Islands, inferring its influence is felt across many spheres of human interest. This highlights the complexity of climate change, as understanding its full impact requires understanding of the connections between many fields initially considered distinct, but interrelated and dependent. In this chapter these seemingly distinct yet clearly interdependent fields are analysed in detail, with connections made to their influences on CCA programs. CCA and its links to neoliberalism are explored here and the role of cultural values and beliefs. Social structures are important influences of perceptions towards climate change and CCA programs, in particular perceptions that groups have of each other. This is expanded upon in the section exploring perceptions of cultural inadequacy and deficit. The section on local perceptions, voices and relationships looks at how climate change and CCA can influence lived realities. The section that follows, illustrates how perceptions of the various stakeholders are expressed through language and communication and shows how the technical language in CCA programs is an extension of worldview and ideology of the various stakeholders.

CCA and the challenges of neoliberalism

CCA programs face a number of challenges to their effectiveness. This research shows these were most notably linked to expressions of neoliberalism. Neoliberalism was influential due to its expression through audit culture and contract culture. Audit Culture in particular utilises accounting and ranking techniques that were replicated in systems and practices

across CCA programs. The link between CCA, audit culture and neoliberalism is made clear when Jane Kelsey situates neoliberalism as a “contractualised model of public functions, funding and employment” (Kelsey & New Zealand Law, 2015, p. 245). While neoliberalism may be considered a ‘fuzzy term’ lacking a consistent and clear definition (Birch, 2016, p. 110), a suitable definition is found in Harvey (2005, p. 2) who defines it as follows:

Neoliberalism is in the first instance a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade. The role of the state is to create and preserve an institutional framework appropriate to such practices.

The influence of neoliberalism is further described (Harvey, 2005, p. 3) as follows:

Neoliberalism has, in short, become hegemonic as a mode of discourse. It has pervasive effects on ways of thought to the point where it has become incorporated into the common-sense way many of us interpret, live in, and understand the world.

Friedman (1962) lays the foundation for neoliberal ideology with his rationale for “the organisation of the bulk of economic activity through private enterprise operating in a free market – as a system of economic freedom and a necessary condition of political freedom” (Friedman, 1962, p. 4). In his view, smaller government was essential to both economic and consequently political freedom. He goes on to postulate that, “the power to do good is also the power to do harm; those who control the power today may not tomorrow; and, more important, what one man regards as good another may regard as harm” (Friedman, 1962, p. 3). A consequence of this is that power could be centralised in groups other than government who have little interest in public good or wellbeing. This includes large corporations with an overriding profit motive.

Examples of this can be seen in logging and mining companies causing significant ecological damage in the Solomon Islands, while government departments are under-resourced and disempowered in response. In a contemporary setting, Naomi Klein in *This Changes Everything* (2014), builds a link between the weakening of the state government and the growth of large corporates unencumbered by regulation or requirements to control environmental impacts. Klein focuses on the worst excesses of capitalism, as expressed through centralism and an urge to not be overly drastic in responding to climate change. This urge to not be overly drastic to a crisis needing a drastic response is demonstrated with CCA

programs not challenging the economic systems contributing to environmental degradation through logging and mining. Klein considers the policy pillars of the neoliberal age to be privatisation of the public sphere, deregulation of the corporate sector and lowering of income and corporate taxes.

Wright and Nyberg (2015) see the challenge with neoliberalism is that those that adhere to its principles believe that events, such as oil spills, can be resolved by the same neoliberal thinking that caused it. Corporates seek to legitimise their actions through 'green capitalism' and industrydetermined certification schemes. This helps them to maintain a hegemony through building common identity with like-minded organisations and persuading governments and citizens of the legitimacy of corporate positons. Extreme neoliberalism is given further legitimisation by the development of our global governance system that supports corporate business models, less regulation and privatisation (Gonick & Kasser, 2018). Carbon mitigation solutions such as REDD+, which have been promoted in the Solomon Islands are examples of such market based solutions to market generated problems (UNDP, 2019).

A number of authors, such as (Kipnis, 2008); Shore and Wright (1999), view audit culture¹¹ as a feature of neoliberalism. Notably however, contract culture¹² is a less clearly defined as an expression of neoliberalism, but Stott (2015) make this connection, while Birch (2016) regards neoliberalism not as a market based epistemology, but a contract based one. Kelsey considers neoliberalism as a "contractualised model of public functions, funding and employment" (Kelsey & New Zealand Law, 2015, p. 245). Some authors suggest a strong relationship between contract culture and audit culture with both utilising "targets and output indicators to determine funding arrangements..."(Gray, 1997, p. 344).

Shore and Wright (2015) considered audit culture as the spread of financial accounting techniques into measuring and auditing, redefining accountability and trust of individuals to make decisions. Relevant here is the observation that "dominating effects illustrate how the

¹¹ The definition of Audit Culture in this research follows Sauder and Espeland (2009, p. 80) who consider that ranking redefines accountability, transparency, good governance while diminishing the salience of local knowledge, absorbing vast resources and extending market logic. The definition also includes other numerical indicators that "see the principles and practices of modern accounting and financial control are being applied to contexts far removed from the world of bookkeeping and corporate management numerical indicators" (Shore & Wright, 2015, p. 421).

¹² The definition of Contract Culture applied in this research is the culture created through the implementation of contractual relationships. The specific relevance here is the influence contracts have on organisational and interpersonal relationships as explored by Stott (2015) and Birch (2016).

introduction of audit and ranking into a new organizational context radically reshapes that environment in ways that mirror the values and priorities embedded with the audit technologies themselves”(Shore & Wright, 2015, p. 422). Not only can audit cultures reshape organisational environments, but they can obscure inconvenient facts as “failure is not an option in a results-driven culture”(Scott, 2016, p. 554). The other larger issue is that audit culture applied to complex cultural systems bypasses the social systems and brokerage processes that are required for development to work successfully (Scott, 2016). Both audit culture and contract culture could be observed in CCA program implementation. What is therefore clear is that contractual arrangements have equally pronounced effects on relationships and the form and function of systems.

The challenges of CCA programs are therefore heavily influenced by neoliberal influences, primarily demonstrated through audit and contract culture. Contract culture was expressed through time-constrained contracts, and exemplified by weak relationships and low trust between short-term donor programs and recipients. Expressions of audit culture were expressed through monitoring, evaluation and output-dependent programs. An example of this was the importance placed on the delivery of a project rather than on project quality, an issue raised by a number of participants.

Thus neoliberalism is an influential factor in the Solomon Islands and acts as a framing ideology of donors and participants when conceptualising CCA and influencing associated actions (Fieldman, 2011; Webber, 2017). How these neoliberal influences are expressed was also dependent on a number of other factors, such as cultural values and beliefs.

Cultural values and beliefs and CCA

Traditional ecological knowledge (TEK) is often reified as a panacea for adaptation. CCA programs seek to discover local practices that may provide solutions that are effective in the local context and provide long-term sustainability. Wenzel (2009) and Leonard et al. (2013), in particular, explore how traditional knowledge founded in practice can assist in defining more appropriate adaptive solutions and mitigation techniques. There is also the converse situation in that traditional ecological knowledge will guide the “development of equitable

and effective climate change strategies” by providing information on what is *not* possible (Leonard et al., 2013, p. 631).

Hviding (1996, p. 29) illustrates a common misconception, stating that there is “no traditional baseline” of unchanging homeostasis, nor is there any one-sided change caused by colonialism and modernisation. Traditional ecological knowledge therefore has the capacity to develop over time with changing circumstances, challenging assumptions that it is susceptible of dying out and making it appropriate to a period of rapidly changing climatic conditions (Gómez-Baggethun & Reyes-García, 2013). Williams and Hardison (2013) take the view in their exploration of traditional ecological knowledge that mutual co-production with outsiders can produce new insights. Inglis (1993) expands this further, regarding the transmission of TEK, with the processes of transmission over generations, important for habits to become customary ways of doing things and knowledge to become institutionalised.

Hviding believes regular and cyclical engagement with the natural environment produces ‘reminders’ and ‘signs’ which are borders of cultural domains and social categories (Hviding, 1996, p. 31). Hviding (1996, p. 348) also believes that groups sometimes communicate idealised or ‘essentialist’ images of culture to more simply express culture and customs to the outside world. Efforts to restore cultural knowledge to climate change discourses are important as these are often lost. In this regard he discusses ‘restoring the human’ to climate change discourse and action (Hviding, 2017). Thus traditional knowledge can be assumed to be critical to the ultimate success and longevity of programs (Leonard, Parsons, Olawsky, & Kofod, 2013; Wenzel, 2009). It needs to be understood, however, that access to TEK is often controlled –only given to those that have the proper attitude, maturity, and responsibility. The concern is that the sharing of this knowledge with third parties can result in it no longer being controlled by traditional customs and norms (Gómez-Baggethun & Reyes-García, 2013).

Therefore, due to the a strong neoliberal influence, CCA programs often have little capacity to integrate TEK or indigenous perspectives even though CCA programs are typically dominated by Solomon Islands staff. This is somewhat of a paradox as traditional knowledge is likely to provide both solutions to what may be possible in terms of CCA, and also inform what is not likely to be successful. So even though what constitutes TEK can often be contested, TEK where it can be identified, is critical to the success of CCA programs.

Social structure, gender and impact on CCA

Donors come to the Solomon Islands with significant resources and an intention that these resources are utilised within short timeframes to achieve defined objectives. The allocation of resources gives donors' power and this power can influence the relationships between stakeholders and experiences of programs (Findley, Harris, Milner, & Nielson, 2017). John Cox (2009) suggests donors assume an underlying traditional and egalitarian governance system operates within traditional societies and that there is an active citizenry waiting to be mobilised to influence the state. However, the converse may also be likely – with patronage systems present relying on clientelism, deference and submissiveness.

Sahlins (1963) suggests the appearance to outsiders of an egalitarian political structure is due to a flatter and more fragmented political structure of Melanesian tribal groups compared with Polynesian groups which are more hierarchical, though competition (and hence power) still plays a role in individuals becoming an influential 'Big Man'. Traditionally Big Man leadership figures are individuals with exceptional ability in areas such as hunting, fishing, gardening, war or public speaking (M. D. Sahlins, 1963). While political structures may be flatter in Melanesian tribal groups this does not necessarily equate to gender equality, as often men only are able to achieve Big Man status (Godlier, 1986). A commonly occurring theme from this early anthropological work, therefore, is the absence of women from positions of power and influence. Contemporary literature places more prominence on the role of gender as women are underrepresented in governing agencies and climate policy (Bee, 2016). In addition, there are concerns within gender discourses for assuming homogeneity amongst women, in that women are seen as either 'virtuous heroines' or 'victims of climate change' (Bee, 2016, p. 72; Pearse, 2017). Nevertheless, the different perspectives women can provide on climate change includes different perspectives on possible CCA solutions (Alston, 2013).

Barnett and Campbell (2010, p. 122) raise the issue of power dynamics at the community and village level, as these can raise difficulties for the implementation of climate change programs, particularly due to past negative experiences with previous programs or expectations that programs are going to deliver large infrastructure improvements. They highlight that Pacific Islands Countries (PICs) commit considerable in-kind funding to most

donor-funded projects through provision of land, labour and facilities which can often exceed contributions of donors. This suggests Cox's argument of one sided clientelism may not be entirely accurate with significant contributions by countries and communities hosting climate change programs. Gardner and Lewis (2000) demonstrate that development is not a purely hegemonic practice imposed from the top down and that development discourse should be considered in a less homogenous context involving multiple and ever-changing realities and narratives.

While gender is increasingly incorporated into CCA programs, it may well suffer from assumed homogeneity of woman as either heroines or victims. There are also still likely to be residual assumptions around stereotypes of leadership based on the concepts of the Big Man as the gatekeeper to TEK and community participation.

Perceptions of cultural inadequacy and deficit

The rich content of interviews and observations related to the perception of deficits within Solomon Islands culture, as well as private and public sector systems.

Cultural deficit is a term that was developed in educational research and attributes deficits to values, race, behaviour and social economic status in colonially inspired deficit themes (Valencia, 2010; White, 2014). This indicates that perceptions can be due to assumptions of those we are not familiar with and who occupy different social networks. Abram (Abram, 2001) provides the example of government planners in Buckinghamshire planning a new housing development and assumed by members of the public to be incompetent and anti-environmental. The planners considered themselves as consciously trying to make a positive difference to provide public housing as a basic human right, though they were restricted by policy and political influence, making their position uneasy.

Perceptions of a developed 'self' and an underdeveloped 'other' are explored in *The Paternalism of Partnership* (Baaz, 2004, p. 132) with the author highlighting contradictions that develop associated with the 'other' in the context of development programs. The author represents the 'other' as both passive and waiting for others to take over, but at the same time as seeking to exploit opportunity and being extraordinarily resourceful. Notions of aid dependence and cultures of dependence fit with neoliberal critiques of social welfare that argue interventions rob individuals of motivation (Harvey, 2005). Cox (2009) supports this for

the Solomon Islands, suggesting the predominance of clientelism impedes demand-driven good governance from emerging. The perception of the 'other' as being extraordinarily resourceful is the foundational basis of neoliberalism, where liberating individual entrepreneurial freedoms leads to advancement of human wellbeing and economic advancement (Harvey, 2005). These contradictory conceptions of the 'other' as being both passive with the need for guidance, as well as being entrepreneurial appear to play a part in engagement between CCA programs and stakeholders in the Solomon Islands.

Local perceptions, voices and relationships

The literature that addresses the perceptions and relationships of those involved in climate change adaptation programs while occasionally situated from the point of view of intended recipients, is more frequently from the role and the voices of implementers. While perceptions of climate change are linked to TEK through changing traditional practices and the discourses of those experiencing climate change first hand (Riseth et al., 2011), the exploration of perceptions of CCA programs offers the possibility of going beyond this, towards understanding how participants actually conceptualised and responded to many of the challenges they faced through involvement with CCA programs. Perceptions can be revealed through hearing the voices of communities that are intended recipients and observing the way relationships are conducted between communities and CCA programs.

A case study by Petheram, Zander, Campbell, High, and Stacey (2010) discusses indigenous perspectives from Arnhem Land in Australia of climate change and also climate change adaptation. This study highlights the need for consideration of traditional ways of adapting to climate change, but at the same time recognising the substantive weight groups place on government policy, planning and the influences of poverty. This perspective is in contrast to the main body of climate change adaptation research which primarily explores participant experiences of climate change through changing environmental factors (Balama, Augustino, Eriksen, & Makonda, 2016).

Kelman (2010, p. 606) expresses the following regarding the importance of local voices (*and therefore experiences*): "irrespective of external judgements about the information being confirmed or confirmable, they provide insights into people's interests, desires, and

perceptions”. Kelman (2010) goes further to suggest that local voices are important to provide input into climate change responses, but also acknowledges that there are limitations to local knowledge due to the difficulty in detecting certain changes that are very gradual over time and also at a very small scale, which he suggests is why diverse forms of knowledge are required to strengthen local institutions. This sentiment is echoed by other authors who suggest that to better understand what climate change means to communities, a better understanding of how people experience and respond to changing climatic conditions is required (McCubbin, Smit, & Pearce, 2015). While research on the perceptions of the outsider trying to understand local realities and responses to the felt effects of climate change are not uncommon, little literature explores how people experience or interact with those that are delivering adaptation or mitigation programs.

Communication and language: influences on CCA programs

The role of communication and language was an important factor influencing responses and experiences related to CCA programs. Communication and language were explored due to programs emphasis on climate change science and technical terminology commonly associated with CCA. The expectation was that the usage of this language it would lead to a more informed population that is better equipped for adaption.

Use of terminology is also extremely relevant to donor, community, and provincial government interactions as language contains embedded knowledge and power. Shore and Wright (2015), for example, consider words such as transparency, efficiency and effectiveness as critical elements that contribute to building a new audit culture ideology. Barnett and Campbell (2010) in their discussion of knowledge, power and climate change in the South Pacific remind us that in Fiji one word is used for both weather and climate. So when leaders of a CCA programs assumed they were discussing climate change, it may in fact have been weather being discussed. They also were unable to find an equivalent local language term for ‘vulnerability’ anywhere in the Pacific, with ‘weak’ being the closest they came to a substitute. The common usage of terms such as ‘resilience’ in climate change programs could have significantly different meanings between donor, community and provincial government. Conscious or unconscious usage of technical or customary terms may also be used to promote or restrict access to wider bodies of knowledge. Security discourse for example uses specific

terminology that is abstract from daily concerns and can make questions from those who are not experts appear uninformed or even naïve (Brock-Utne & Garbo, 2009). Cornwall and Brock (2005, p. iii) speak of how development language is stripped of its ability to express nuances of power and politics and can become apolitical terminology, similar to language used by CCA programs, stating that “how words that once spoke of politics and power have come to be reconfigured in the service of today’s one-size-fits-all development recipes, spun into an apoliticised form that everyone can agree with”.

In the context of programs in the Solomon Islands, CCA language and terminology is frequently communicated by outsider experts in the belief that their expert skills and associated language provide knowledge not available within the Solomon Islands. Sornig (1989, p. 95) states that “Nevertheless it is not the verifiable truth of a message which is relevant and likely to impress an audience and make it act upon a certain impulse; it is the way things are said (or done), irrespective of the amount of genuine information carried by an utterance”.

Conclusion

The dominant features of neoliberalism expressed through this research were audit culture and contract culture. These were representative of CCA programs as they are often expressed in contractual form with specific auditable elements. In situations where neoliberal systems dominate they can obscure unfavourable outcomes in the pursuit of success. This pursuit of success therefore has implications for integration of other perspectives and cultural influences which requires time and flexibility. Notably, audit culture and contract culture at operational level of CCA program result in them becoming dominated by bureaucratic processes associated with auditing and evaluation. More broadly however, neoliberal influences can lead to a strengthening of the private sector instead of the bolstering of weakened state and civil institutions, which authors such as Naomi Klein consider critical to addressing climate change.

Cultural values as represented through Traditional Ecological Knowledge (TEK) sometimes are assumed to relate to a 'baseline' body of knowledge, when in actuality there is no baseline as TEK changes over time. So while there may be assumptions that TEK is vulnerable to dying out due to an inherent inflexibility, this suggests an overly simplistic view. While access to TEK is often only provided to those considered worthy of accessing it, those involved with short term CCA programs may therefore not be considered worthy. The role of TEK also has close ties with social structures, as similar lack of understanding by CCA programs of TEK can also be seen in perspectives and approaches towards social structures. Traditional Ecological Knowledge, while often conceived as a panacea for CCA programs, can provide guidance on possible forms adaptation can take. Hviding (1996) states there is no traditional baseline or one-sided change caused by colonialism, suggesting that traditional ecological knowledge evolves and develops over time. This represents a challenge for CCA programs that often refer to TEK as a 'tool' but never contextualise the cultural social and cultural contexts in which it exists or the consequences of co-opting it for use.

The archetypical 'Big Man' is a powerful concept and was associated connotations of a flatter hierarchical social structures. However Cox (2009) offers an alternative explanation in suggesting patron-client relationships are more influential than archetypical 'Big Man' constructs. The role of women would have been subordinate in 'Big Man' social structures. In more recent time's women have been considered as either heroines or victims of climate change. In response, CCA programs have attempted to place greater focus on the need to include perspectives of women.

Deficits were expressed through by participants in a number of ways in relation to CCA programs, often when referring to economic advancement. Perceptions of cultural deficit, which have their origins in educational research, were part of a wider perception around cultural inadequacy which sees the 'other' as both dependent on support, or alternatively as independent and entrepreneurial. The theme of the 'other' as dependent is further supported Cox (2009) who suggests there is a passive clientelism involved in many interactions in the Solomon Islands. These perceptions of deficit can be directly linked to neoliberal ideology that consider interventions that provide welfare as weakening the motivation of individuals.

The literature is sparse on perceptions of those involved with CCA programs and their perceptions of these programs. However, it is clear that those that experiencing climate change consider not only climate change as important but also associated issues of poverty

and governance. While an understanding of how groups perceive the impacts of climate change is acknowledged as important, it is also essential that the limitations on perceptions are realised as perceptions of gradual changes over time and at a small scale may not be reliably detected. This suggests that caution also needs to be demonstrated when assessing perceptions of CCA programs.

Language associated with CCA programs is used to restrict or gain access to certain bodies of knowledge, and has the ability to empower and disempower. This appears the case with terminology associated with audit culture which expands the reach of neoliberalism with the use of specific terms. However, as the case may be in other situations language is apoliticised and stripped of its meaning so that it is acceptable to all. At the community level Barnett and Campbell (2010) provide a good exploration of the issues around language associated with CCA programs in the Pacific and show that terms that are commonly used by CCA programs are not widely recognised in the Pacific and may have completely different connotation in the context they are intended to be used.

Chapter 5

Analysis of field research data

Introduction

This chapter presents an analysis of prominent findings that emerged from data collected from semi-structured interviews, participant observation and analysis of literature. The questions asked during semi-structured interviews sought to determine the relationships of those implementing CCA programs and those who were the recipients of those programs through an analysis of some of the factors that were influential elements of those relationships.

Focus of questions

Participants were asked questions to clarify in-depth perceptions about CCA programs they had been involved with. These responses were deliberately sought to determine the deeper cultural and ideological views that may have influenced these perceptions and demonstrate how perceptions influenced actions. This exploration of perceptions was also used to provide a subjective reflection on the role and significance of relationships with those involved in CCA programs. Perceptions and relationships ultimately highlighted the culture that is jointly created when programs were implemented.

Although there were 13-15 questions that spanned five sub-themes as part of the semi-structured interview process, these questions broadly focused on the following:

1. How were individual and organisational stakeholders treated and their competing priorities integrated during engagement with CCA programs?
2. How do stakeholders perceive relationships with CCA programs beyond traditional CCA narratives which were focused on delivering program or project outputs?

3. How do stakeholders perceive CCA program influence on associated cultural, economic, political and environmental factors, which is often omitted from traditional CCA program narratives?

Thematic analysis categories

Participant responses to semi-structured interviews were diverse. Interviews generated both solicited responses—i.e., those that were directly related to questions asked—and also unsolicited responses which were led by participants. The final themes selected were those that included an abundance of data or unique perspectives. The key thematic areas that emerged are summarised below and elaborated on later in the chapter.

Emergent Thematic Area	Description of thematic scope
Risk and risk avoidance	Conceptions of risk in relation to climate change and also reputational and relational risk to those involved with CCA programs.
Christian beliefs and institutions	Christian beliefs and institutions and how these influence the actions of donors and community members. This includes assumptions on the role of religious leaders as advocates for CCA programs.
Relationships and connections	The role of interpersonal relationships in influencing CCA programs and perceptions of approaches towards CCA programs.
Perceptions of abundance	Conceptions of the Solomon Islands as a romanticised land of abundant natural capital. Also conceptions of CCA programs as having access to abundant external financial and material resources.

Observations of climate change and natural disasters	Observations and experiences of climate change in the Solomon Islands. This includes examples of how climate change impacts were perceived by those that experience them. Also includes outsider perceptions on climate change.
National, provincial and community-level governance	Government structures and processes and how they guide the conduct of relationships and the form of CCA program responses.
Awareness and education workshops	Information provision by CCA programs. Behavioural change and influence on worldviews through awareness and education programs.
Economic norms, opportunities and exploitation	Global economic factors governing the structure and form of CCA programs. How these defined relationships between countries with the biggest influences on climate change and the Solomon Islands.
Dependency and self-determination	Global, national and community influences on dependency and self-determination. Including the control of knowledge and natural resources and CCA.
Traditional ecological knowledge and sovereignty	References to traditional ecological knowledge and assumptions relating to beliefs of what traditional ecological knowledge is. The co-opting of traditional ecological knowledge to benefit programs.
Contract and audit culture	Contract culture and audit culture as expression of neoliberal bureaucracy,

	particularly short-term thinking shaping CCA conception and implementation. A focus on quantitative over qualitative measures and on tangible deliverables.
Comprehension and language of CCA and Disaster Risk Reduction (DRR)	Technical language and terminology associated with CCA and how its use to inform, educate and facilitate relationships and activities.
Cultural deficit thinking and the omission of culture	Characteristics of culture considered in negative terms, including Solomon Island, donor and CCA program culture. This theme also includes the omission of reflection on CCA program culture.

Analysis of key findings

Transformative dynamics of market forces on CCA programs

One prominent issue that emerged from this study was the influence of neoliberalism and its influence on Climate Change Adaptation (CCA) programs. Authors such as Klein (2014) state expressly that to combat climate change there needs to be transformative change that radically reconfigures the global economic system. It is clear that although addressing climate change requires transformative change at the macro level, with high level changes supported by a multitude of actions at the micro level. However, current CCA programs operate largely with a 'business as usual' approach with incremental change. In some cases CCA programs further entrench neoliberal forms of development through promoting solutions reliant on market-based systems, such as carbon trading.

Neoliberal values were manifested in the form of contract culture and audit culture that saw delivering climate change adaptation projects with a degree of ambivalence about long-term sustainability. There was a perception that projects were done to suit the donor requirements more than the recipient needs through a process of audited box ticking

exercises. Donor programs were based on short-term interventions. Short-term program cycles of no more than five years (and often much shorter engagements for consultants and contracted staff) means there is limited chance to critically assess programs, reformulate approaches or build meaningful relationships. These short-term approaches appeared to silence the voice of staff who were best placed to provide critical guidance through a fear of '*tok spolim*'¹³ because of job security and jeopardising networks.

Participants frequently referenced restrictive aspects of an increasingly cash-based economy on everyday life. Field research in Choiseul Province revealed the continued expansion of a cash-based economy from 2010, when I worked as a volunteer. Examples of this rapid change include the establishment of a large commercial fuel depot on an island close to Taro Township (figure 2), and the continuation and expansion of logging on Bakele tribal land on the mainland opposite Taro, which commenced in 2014 (figure 3). Participants also noted that timber rights hearings continued to accelerate over this same period. Expanding subdivision and residential house building on Sipuzae Island, the main residential island immediately adjacent to Taro Island, continues at pace (figure 4). These physical expressions of development expressed through infrastructure and exploitation of natural resources were mirrored by societal changes, such as a decline in the reciprocity of labour from relatives who would traditionally help constructing housing of their extended family groups. It was noted that even relatively close family had an increasing expectation of financial remuneration for work performed, when formerly the provision of food, cigarettes or other goods would have sufficed.

Figure 2: Fuel depot being constructed in Choiseul Bay in 2013 (Source: Scott Butcher)



¹³ *Tok Spolim* translated means talk spoil, to talk badly about someone.

**Figure 3: Logging ship departing Choiseul Bay with logs removed from Bakele land in 2015
(Source Scott Butcher)**



Figure 4: Subdivision on Sipuzae Island in 2010 (Source: Scott Butcher)



In the Solomon Islands the subsistence economy is centred on households and based on the nuclear family (Hviding, 1996). However, this is changing as parents are required to find paid work to pay for basic needs such as medicine and food. Educational expenses are also high, even though the public education system is supposedly free. From earlier observations in Choiseul between 2010 and 2012, numerous village groups would attend timber rights hearings on Taro Island to determine which group has legitimate rights to land where logging took place. Claims such as these to traditional landownership can be financially rewarding to chiefs and other leaders. Increasingly, clarification on land ownership was being sought so that mining companies could be engaged. The daughter of a chief who had signed the logging agreement for logging not far from Taro Island believed logging would cause social problems. She mentioned that local women had been using the logging roads and transport to venture increasingly far from the village to cultivate gardens. However, they would no longer be able to do this when the logging roads became overgrown after the ‘company’ departs with the machinery used to maintain the roads. She also had concerns that village

youth would no longer have access to timber suitable for building houses once the best and most accessible timber has been removed by the logging company.

Another example of extreme capitalism is in the rental housing sector with residential properties in Honiara at extremely expensive. Previously working as a consultant in the Solomon Islands between late 2014 and 2015 I paid SBD\$15,000 (NZ \$3,000) per month for a large house with fairly simple amenities and little apparent expectation by the landlord these need to be in working order. Another example involved a Solomon Island friend working in a government role and residing in a rented room which the Solomon Islands Government paid SBD\$3,000 (NZ\$150) per month for. Even with this high cost, it had virtually no furniture, no air conditioning, and not even a fan in temperatures that were typically around 28° Celsius with high humidity (Solomon Islands Meteorological Service, 2011). These examples give some insight into expressions of market-based influences on Solomon Islands society. Their distorting influence is compounded by weak state structures, weak regulation and little enforcement. Market-based influences, usually displayed as neoliberalism appeared consistently across the main themes. This was apparent through the perceptions and relationships of those involved in CCA programs.

Risk and risk avoidance

Participants interviewed suggested risk in the context of climate change is usually considered as the risk posed by natural hazards and more recently human vulnerability; however, evidence of aversion to political and reputational risks also emerged.

Reluctance at the national level to discuss and plan for relocation of people displaced by sea level rise appeared linked to an aversion by nations (and by association development programs), who are seeking to avoid potential legal and moral liability for causing climate change.

I think, for a country like this, which has that potential for internal relocation, I think the donors shouldn't really shy away from it. I think if we work together with land owners, the government and the donors, I think it's possible to do those things internally. There is a general resistance against, at the global level, which is really part of the loss and damage...[inaudible]... (Jane)

What is being referred to in the quote above is a reluctance to address issues of relocation due to the possibility that this will then lead to legal exposure of developed countries. The concern of these countries is presumably that if they become involved in the relocation of individuals or communities then it infers some responsibility for creating it through greenhouse gas emissions.

While CCA programs outwardly acknowledged power imbalances and gender inequality were inconsistent with sustainable development, interview responses clearly showed that CCA programs and donors were not always willing to intervene to address these where they existed. Rebecca made this observation relating to this aversion towards intervention.

So [agency name] or whoever at the [CCA program] meeting, they said that they left it up to the communities to delegate or nominate their person so it wasn't their fault if they didn't nominate women. (Rebecca)

This comment speaks of a deeper contradiction, of professing a desire to address issues such as gender inequality and other forms of inequality but an unwillingness by CCA programs to risk loss of political, economic and symbolic capital in the process, particularly if this creates conflict with participant groups.

Christian beliefs and institutions

Interviews and participant observations highlighted the importance of Christian beliefs and institutions in Solomon Islands culture, particularly in rural situations. At the commencement of this research, the role of organised religion in CCA programs was not an anticipated focus however informal interviews, participant observations and existing literature all indicated that Christian worldviews and religious institutions were powerful influencers within communities, and often reified in program literature (GIZ/SPC, 2015). While Christianity is frequently recognised as fundamental to Solomon Island belief systems (Dinnen & Firth, 2008), its influence on CCA programs appeared less dominant than neoliberal and other market-based influences. Even though Christianity and religious institutions were acknowledged as being important allies in delivering CCA programs, no research was located on the factors likely to influence churches and religious leaders to mobilise this influence, and

it was simply accepted in CCA literature that the Christian belief systems and religious institutions would be collaborative and willing to be involved.

A priest from the Anglican Church of Melanesia stressed that climate change adaptation programs were being carried out by the Church to assist communities as part of the Church's strategic reinvigoration called the 'Decade of Evangelism and Renewal from 2017 to 2028', although there is no information on the Church's website of the specific activities involved (Anglican Church of Melanesia Media Office, 2017). Faith-based climate change action is likely to attract the attention of donors if it is consistent with conventional CCA approaches, however religious groups had widely varying views on climate change. One participant retold an observation from Papua New Guinea and gave insight into how religious perspectives can influence responses to climate change and consequently adaptation:

Anyway they did this movie called Acid Oceans, and they showed it, this [was] in New Guinea and not the Solomons and they showed to this tribal Council of about 300 chiefs, I was up there, I showed it and it was pretty grim stuff. None of them cared because they followed it up directly with some video of some evangelical preacher talking about how God was going to fix everything. (Peter)

Another perspective expressed was that a biblical judgement day will be coming, in which case there is little need to act on climate change. This belief was expressed by followers of the Seventh Day Adventist Church, a belief clearly at odds with donors seeking an interventionist approach. However the concept of "caring for creation" appears to be emerging within some faiths ("Caring For Creation ", 2018). A priest from the Anglican Church of Melanesia expressed the belief that even though dominion over nature was expressed in Genesis, the Anglican Church of Melanesia interprets this as followers being stewards of God's creation rather than having domination over it. How widely these various theological interpretations influenced development and implementation of CCA programs was unclear. CCA programs saw the role of religion as a 'tool' that programs can utilise for implementation. Religious influence was seen as benign and able to be mobilised to support (or at least not oppose) CCA activities. Comments on the real or assumed power of the church were often best simply summed up like this: "Likewise, the pastor also has a very influential role and could play a key role during awareness, training and adaptation work" (GIZ/SPC, 2015, p. 11).

Relationships and connections

Strong relationships are critical to life in both rural and urban settings in the Solomon Islands. The goodwill of others is critical for support to grow and gathering food, carrying out religious practices, raising children, caring for elderly relatives, building community infrastructure and the continuation of traditional practices. CCA program staff and donors were all cognisant that strong relationships needed to be nurtured for access to cultural and social capital and for access to future opportunities. Good relationships were critical in facilitating access to communities and traditional ecological knowledge. For those in provincial and national government, good relationships with donor programs allowed for access to resources and opportunities not accessible in provinces or through existing networks. While the influences of audit and contract, cultural deficient thinking and perceptions of abundance influenced relationships significantly, the intent of partners was held in high regard if they intended to build long-term associations, especially when partners were pressed to build meaningful relationships by overwhelming contractual or financial obligations that imposed restrictions. Paul expressed the importance of long term relationships with the Nature Conservancy like this:

From my own personal view and my own experience. I seem to really believe, in a way, of how the nature conservancy and the Lauru Land Conference, that came together because in Choiseul much of the activities now people are reaping the benefits, especially in the marine protected areas and terrestrial areas; the Lauru Protected Area Network. That approach I think is a genuine one...(Paul)

Paul goes on to suggest that the organisations involved in conservation and climate change activities in Choiseul were now acutely aware of the benefits of these long-term relationships and what they can achieve.

We are also a member of the coral triangle and now Arnavon and so it's a long-term commitment, these two organisation [The Nature Conservancy and Lauru Land Conference of Tribal Communities], they're realising. (Paul)

Participants therefore considered long-term commitment by organisations as important, with ongoing presence of respected organisations and individuals' important factors in influencing the uptake of any program. As one individual who lived outside of the

Solomon Islands but did regular consultancy work there noted, “You’re only as relevant as your last visit”. This inferred those most frequently present had more respect and stronger connections. Those with a more meaningful connection were also considered by participants to be more effective in achieving tangible outcomes.

Therefore presence and longevity were important, but attributes of deference and gratitude were also important for maintaining enduring and beneficial relationships. This came in a number of forms and the most obvious was an unwillingness to pass judgement or criticise a program, as this could possibly lead to a loss of access to resources or opportunities. This was further supported by positive symbolic reference relating to powerful and influential stakeholders. These positive references were likely to cultivate access to material resources, or cultural and social capital. This was demonstrated below with a symbolic reference made regarding central government and its ability to influence donors.

What I find out too is the provincial government itself hasn’t got the expertise on all these climate change-related activities and also the resource for going into these climate change-related activities. So it [provincial government] appreciates this report of the national government by [for] rallying our various partners to do climate change activities around Choiseul. (Paul)

Maintaining good relationships was therefore central across communities and institutions within the Solomon Islands and as well as CCA programs. CCA and other programs that had longer history had more cultural capital. Those with capital were perceived as having a better understanding of culture and a genuine intent towards development that improves the lives of those in communities, rather than for the benefits of the outsiders involved or the organisations they work for.

One way that CCA programs sought to build and maintain relationships was through narratives in program documentation that avoided politically sensitive issues such as religion, community or individual conflicts. An example of this was the CHCCHAP Participatory Rural Appraisal Report where the authors acknowledge “The communities have their own institutions and protocols, and climate change adaptation (like all other community-based interventions) has to work with these institutions and systems to ensure ownership and long term sustainability when partners exit”. The report goes on to say that “The residents of Nuatabu knew the various stakeholders within their community and their respective roles. They were also clear on processes and how things were done within the Community”

(GIZ/SPC, 2015, p. 1). In these documents there is no expansion on what these respective roles are or how these roles influence relationships. Gender is often a focus of CCA program documents, with a focus on the differing involvement and therefore level of influence between men and women (Basel, December 2014, p. 7). However, a focus on CCA program delivery largely ignores perceptions of relational and power dynamics that lead to gender inequality.

Perceptions of abundance

A small number of interviews revealed a theme of abundance of natural resources as a form of resilience. This concept of abundance was displayed in two distinct forms. The most identifiable was the notion of substantial accessible natural capital that could be easily accessed for economic growth, thus creating economic resilience. A strong view of one participant, occasionally shared by outsiders and some Solomon Islanders, is that a societal shift towards awareness of these resources being abundant and accessible compared with other countries would be a step towards increased economic utilisation. This view was reflected by research participant Max, who believed that the creation of true wealth required conversion of natural resources into monetary wealth. This would then create resilience through improvement in the economy and well-being of people. Modern ecological research, early ethnographic research and colonial accounts paint the Solomon Islands as abundant in natural resources, a well-known biodiversity hotspot and important as part of the Coral Triangle for coral reef diversity (Geoff Lipsett-Moore, 2010). Earlier reports such as that of Clifford W. Collinson (1933) paint them as rich in natural resources such as fisheries:

The sea teems with fish – mullet, trevally, bhuma, rock-cod, bonito, swordfish, king-fish and many many others, most of them excellent eating.

Max who was from outside of the Solomon Islands, yet had been involved in the Choiseul Integrated Climate Change Programme (CHICCHAP), expressed what he had experienced and the conclusion he had reached in these terms:

Water is massive so just put a bucket somewhere and you have everyday fresh water, more or less or you have a river. Food is always growing. You even don't have to take care of it, if

you don't want. You go to the forest or so and pick fruits, cassava is growing wild so you could survive for sure. It's better to do some farming but in a way, you could survive. (Max)

Between 2010 and 2012 while I was working as a volunteer for Volunteer Service Abroad (VSA), a Chief from a village in North Choiseul expressed concern that while the community was rich in land, it was poor in money. In the eyes of Max and the Chief, this natural resource abundance was seen as both a benefit but also a curse unless it was activated in a way that recognised its economic potential, otherwise this resource in its passive and underutilised form was simply wasted. However, this abundance was generally seen by other Solomon Islanders as a critical part of resilience. Abundance of natural resources in the form of food, water and bush building materials, was essential in times of disaster and extreme weather events assorted with a changing climate. Many of these resources would not be utilised until required and were contingency resource for an emergency. Paul stated the importance of these natural resources in times of disaster:

We have a *kakake*¹⁴, it's the food for when there is a disaster. Or we have the food in the bush. We have the things for building a house in the bush if it is a cyclone or the house is destroyed, or we have a place for collecting clean water if it is a flooding big river. (Paul)

This form of contingency is clearly dependent on natural resource abundance. While CCA programs acknowledge this, it is not well embedded within CCA programs which displayed strong economic and infrastructure development imperatives. However, there were some exceptions such as the PRRP program working to establish food security gardens with species more resilient than traditional species, and which can be used following a natural disaster.

Financial capital of CCA programs was also another aspect of abundance raised by participants. This abundance of financial capital was expressed by participants as creating dependency and therefore, contributing to perceptions of cultural deficit. Deficit is covered in more detail in later in this chapter, however it was commonly inferred by participants that outsiders had better access to abundant monetary resources.

¹⁴ Traditional root crop

While this theme of abundance extended through areas of natural capital and donor capital, it also extended to elements of human capital, with the Solomon Islands being considered a pool of untapped resources, certainly for low-cost labour such as seasonal worker schemes that supply orchard workers in New Zealand (Radio New Zealand, 2018b). This seeking of the most easily accessible human or natural capital inputs is a defining characteristic of a neoliberal system (Klein, 2014). While perceptions of abundance were associated strongly with those from other countries engaged with CCA programs, Solomon Islanders shared similar, but context-specific, beliefs that supported the use of abundant natural resources to provide prosperity for themselves and their families.

Observations of climate change and natural disaster

Observations of climate change impacts were originally not part of the one-on-one interviews, as the research was more focused on the perceptions and of those involved with CCA programs. However, interviews began to reveal important narratives of the lived experiences of climate change. Therefore, after a number of initial interviews had been completed, additional questioning was conducted to seek more information on environmental changes participants had observed. This information provided insight into climate change impacts already being noticed. Jane mentioned that while growing up, her life was heavily influenced by cyclones, with these events shaping culturally embedded responses and understandings of the environment. Jane stated her first-hand experience of the impacts of disaster in her home province, which consisted of mainly low-lying atolls exposed to sea level rise.

I guess because I come from two highly vulnerable Islands, so it really plays a lot of influence in terms of how I see climate change and disaster risk reduction. So for example I grew up on my mother's Island Tikopia which is susceptible to cyclones and so growing up as a kid, cyclones would hit Tikopia Island every year, sometimes it just like small ones but then there was this a big one called Cyclone Namu and I was still a little kid then and so I guess that sort of influenced my view in terms of 'OK I think we really need to focus on building our resilience', because for example in my experience during that cyclone you will see everybody the first thing they do when there is a cyclone warning given out on the SIBC [Radio Station] they go and start collecting water, lights, food and then strengthening their homes and so if there are what should I say, if the cyclone is really strong then they've got other, not really evacuations

houses, just temporary leaf huts that they can move to if the waves really come ashore, if it's not strong they can go to the caves. (Jane)

A number of times, participants described examples of either past disaster events or traditional strategies to respond to climate change or disasters, such as growing crops for consumption. Those interviewed were all accepting of climate change and while there was a religious and cultural bias against a positivist scientific narrative, there were no outright beliefs that climate change was not occurring. However, observations by those living in the Solomon Islands of extreme weather events or the incremental changes that could be attributed to climate change did not seemingly influence the overall neoliberal implementation paradigms of programs. Also, while observations were acknowledged and incorporated in CCA program design and vulnerability assessments, they often did not get presented as a cohesive body of knowledge, but often as secondary to positivist knowledge which formed the basis of CCA workshops and presentations. This may have been partly attributable to the challenge these observations present to outsiders with a worldview of a relatively stable and rich environment. Certainly, CCA program responses were mainly in the realm of infrastructure, awareness based on Western science and implementation of bureaucratic tools, rather than influencing cultural and societal change. It was often mentioned by those involved with CCA that climate change was a 'cross cutting issue' and that thematic areas of economic and social interest were interrelated. This was acknowledgement that climate change is not just an adaptation issue, but also a development issue. However, little in the narratives contained in CCA program literature bridged the gap between cultural impacts of observed changes and program actions.

Many recounted observations made for powerful images that referenced changes already happening. These observations showed a changing climate being felt by people in their daily lives:

Yeah, in terms of temperature rise. It is true Scott it's a big issue because it is too hot for people nowadays in the village, they don't go to garden big [middle] day time. Even when they go to the garden for the full day, but they only work in the morning when it is cooler and then in the afternoon, evening side, when it is cooler. (Paul)

This supports a common theme of this research that climatic changes were already happening and behaviours have adapted in response. Although this statement above appears to be made with little emotional attachment, there is an inherent element of distress attached, particularly when such changes impact on the most fundamental traditional practices. What this observation also shows is that knowledge may be less about poorly defined and exceptionalised TEK, and more about powerful real-world observations of a changing climate. These first hand observations of a changing climate were considered less authoritative by CCA programs than Western science. However, as the quote above shows is that responses were already being implemented by those in the Solomon Islands in day-to-day decision making. Of even higher importance, observations also highlighted that climate change-generated conflict is already occurring in the region:

I was up in PNG highlands, doing drought assessments with the El Niño a couple of years ago. That was bad. The highlands approach was, we'll light a fire and the smoke will appease the Gods and it'll rain. All that happened was it started a bush fire, burned down someone else's place and the tribes all fight and 10 or 11 people get shot. (Simon)

So while issue around conflict and resolution of conflict was often dominated by the ethnic tension that occurred in the Solomon Islands between 1998 and 2003 (Brown, 2018), the role of potential future conflict appears to be noticeably omitted from CCA narratives. So while CCA programs looked to establish stability through conventional economic development, little consideration existed of how CCA programs may contribute to conflict or how climate change might increase it as demonstrated above. Assumptions were that climate change will be a gradual process that adequate bureaucratic policy and planning processes can easily accommodate.

National, provincial and community-level governance

Participant perspectives on state governance systems indicated that these often disempowered provincial government. Provincial government was further disempowered by being largely circumvented by CCA programs. State governance systems in the Solomon Islands were largely established by the colonial British government. This means that alongside

‘traditional’ governance structures prominent in villages, there is an established Westminster governance structure. This governance system provided the institutional framework under which CCA programs are implemented. Provincial government as a function of central government was often subservient to central government planning and policy. This put provincial government in a unique position in regards to its deference to central government and therefore the initiative that it could show in controlling CCA activities.

I think the provincial government, as you know, is an agent of the national government, so whatever programmes that they control, the national government; the provincial government has to consult it, according to what is in-line with the provincial government’s intention, policy or plan, then it will be supported. (Paul)

As Paul suggests, those that worked in provincial government were well aware of the more dominant role of central government, and this more powerful position is readily accepted, at least in principle. However, the substantial disconnect between provincial government and central government ministries in Honiara was referred to by participants. This disconnect is due to many factors including poor communication infrastructure, provincial governments’ historically limited financial resources, geographic isolation and cultural conceptions of power. The nature of this weak relationship meant a power vacuum existed in which CCA programs asserted themselves. This was demonstrated through programs often implementing with little regard to provincial medium term development plans or other strategic plans. While those implementing CCA programs claim their role is not simply to implement provincial government planning objectives, those in provincial governments see this inability to help implement provincial plans as a major barrier to adaptation. Plan objectives were half-heartedly acknowledged by CCA programs, who then usually continued to implement according to their own priorities. Rebecca, who worked inside a donor organisation saw this not as malicious, but simply a pragmatic response to delivering a program as stated below:

I don’t think that it’s a conscious thing, like a purposeful thing, I think it’s more a frustrated thing that you’ve got these objectives you have to get through at the end of the day and there not often driven by the government so the government aren’t interested. I think there is a whole range of reasons but I don’t think there is maliciousness in there. It’s just that the government is very difficult to engage and the donors have this, organisations have stupidly tight timeframes that don’t allow for this

lack of capacity and the slowness of the different pace of how things work in the provinces and so it all just ends up being a problem. I don't think it's anyone on purpose doing it though. (Rebecca)

Traditional governance systems

Development programs and CCA programs occasionally refer to traditional governance systems as something nebulous and difficult to define and yet needing to be mobilised. The belief was that harnessing traditional governance systems would facilitate better implementation of CCA programs.

Alongside the formal state governance system exists traditional governance systems on which far less literature exists. This lack of understanding of these systems means they were often overlooked by outsiders. However traditional systems have probably been changing and evolving for a long time, not least due to the influences of colonialism and capitalism. Anthropologist Ian Hogbin noticed the decline in the role of traditional leaders as their ability to influence declined post World War II when young people sought employment in plantations, meaning leaders were not the only ones who had access to money. This, coupled with the rise of Christianity, led individuals to be ultimately responsible for their own actions rather than traditional sacrificial practices being relied upon for the absolution of individuals' actions (Hogbin, 1964, p. 95). There have historically been efforts to reassert indigenous governance systems and develop self-rule in the face of growing colonial rule and influence. The Maasina Rule was a political movement attempting just this. The rationale for its rise in the 1940s and 1950s is well articulated in this quote:

Now that we have the "Marching Rule", it is as if we are working on our own for a good way of life. Until now we have been misled because the Government has been leading us. The Government comes from a foreign country and he will not look after us properly because he is not of our stock. He has done some good things for us and also some bad things; such matters as should make the good running of the Church, he does not give much attention to. His attention is directed to getting more money for himself. When he gets money, he returns home and another man takes his place. (John Apui in Laracy, 1983, p. 144)

From this frustration grew the Maasina Rule movement which sought to create a governance system that would bring indigenous Solomon Islanders' lives up to the same level of those of

the white colonists, and for a brief period in history the idea spread into a number of provinces, which was partially effective until curtailed by the British (Laracy, 1983). The extractive belief of CCA programs that traditional forms of governance could be harnessed is similar to the belief that religious leaders and the role of the church could be harnessed. With little awareness of traditional governance systems demonstrated in CCA program documentation, this appears unlikely.

Centralised governance

Casual conversation and interviews with participants saw references made to inequalities between the provinces and Honiara. Central government was considered to have more influence and capacity in regard to CCA programs. CCA programs aim to work constructively at the community level, but on balance many of the most influential actions that shape the initial direction of programs occur in the capital Honiara, contributing to links between CCA programs and central government ministries being stronger than with provincial governments. Before any CCA program could begin, the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) is required to be consulted. As well as consulting this ministry the provincial government in which a program hopes to implement is required to be consulted. This consultation process gave Honiara-based central government ministries a level of power to influence CCA programs that provincial governments simply did not as they were usually consulted after central government ministries. Honiara has been further entrenched as a focal point, as travel to the provinces is time consuming and expensive. The Honiara concentration of financial and human resources, and program energy, was not only due to government ministries, agencies and NGOs being there, but as a bustling capital, it was where people came to influence, negotiate and build relationships of all kinds.

A scepticism existed amongst the participants that resources arriving in Honiara would proceed no further, ultimately being used for Honiara-based workshops, catering, consultant fees, travel and other program expenses. While central government was perceived to be a holder and supplier of resources through delegated government functions in education, health and other areas, the shortage of resources (both financial and human) of Choiseul

Provincial Government was noted as an impediment to effective implementation of CCA and was expressed in the following quote:

But I feel like the rest of the provincial government has really really really low capacity and they don't even understand how to engage with the donor, they have no capacity really to do community engagement. It always seems to be the NGOs that end up doing that stuff because there is no capacity as in a lack of actual people at their desks, there's no resources for them to travel. (Rebecca)

Donors commonly refer to a capacity shortage of provincial government, which often infers a lack of skilled people to carry out CCA program tasks. However, participants such as Matthew noted, the capacity argument is often conflated with capability. He considered capability as the ability to influence existing systems or processes rather than the absence of skills or knowledge. For Matthew there was substantial capacity already in the Solomon Islands with many highly educated and experienced individuals.

It's interesting. To some of these AVI people, I said, "I find capacity all over the place." Really. I say, "No, I'm not talking about capability, I'm talking about capacity. I'm talking about people who can be enthusiastic and they've got the smarts." They're let down by their process. Capability is different to capacity. There is a capability problem, there's a governance problem and how do you overcome that? (Matthew)

So not only were capacity and capability deficits in Choiseul and Honiara noted, but also that CCA programs could weaken governance structures through creating a lack of confidence and belief in existing governance structures. While CCA was premised on building resilience in governance systems, it was likely to have been impacting beliefs in existing governance structures and systems.

Yes and that's starting from an already weak government base... The government structures are weak and this process weakens them even further. You end up with the government people having no confidence to say, "Hang on a mo, stop. We've got a structure, slow down and work with us." They don't have the confidence to say that so you have a spiral. (Matthew)

Awareness and education workshops

CCA programs used a number of discursive practices to communicate approaches and ideology. Typically this is done through workshops, which occurred as two distinct types. The first of these were workshops as educational opportunities to talk about concepts such as vulnerability, risk, natural hazards, climate science or other concepts. The second approach was that of awareness workshops conducted to notify provincial governments and communities of a proposed CCA program or provide updates on the progress of programs already running.

When programs were being developed, awareness workshops took place to consult on approaches of proposed programs. These awareness workshops sought to build social and cultural capital by establishing new relationships and gaining support from existing relationships. Workshops were also mobilised to highlight CCA program progress after commencement, although these appeared less consistent. The approach of both program awareness and educationally focused workshops is based on the presumption that education on an issue will result in subsequent changes in behaviour. The belief that education results in behaviour change is widely accepted, although in the context of CCA programs its effectiveness appears not to have been measured beyond program-specific monitoring and evaluation. However, education for public health issues such as smoking, diet and sanitation is particularly common in the Solomon Islands (Burnett et al., 2016). Ecotourism research found that enjoyment and satisfaction were prerequisites to paying attention and processing information, and impacting salient beliefs about a behaviour can impact intentions related to that behaviour, eventually leading to behaviours consistent with those intentions (Powell & Ham, 2008).

Workshops occur in the space of a few hours to a few days, often at hired venues and involve catering, sometimes involving fairly substantial quantities of food, providing a benefit to those working in relatively poorly paid government or NGO work. Organisers often pay for participants to fly in to attend. For those that attend, the catering, allowances paid for participation, and content of these workshops were all important draw cards. So for some, workshops may provide a multitude of benefits, not just the development of knowledge. Workshops also represent an opportunity to escape the day-to-day monotony of poorly paid and under-resourced work within either central government or the NGO sector and get paid

a high daily allowance by the organisation running the workshop or if provincially located, a chance to visit to the provincial capital to do shopping or other activities.

One participant raised an implicit contradiction of those involved with climate change internationally that travel vast distances to meet and discuss climate change, contributing actively to emitting greenhouse gases. This contradiction around excessive travel also applies to education and awareness programs.

How long have we been talking about climate change adaptation? From my slightly cynical perspective, there seems to be a lot of global workshops and people flying around the world in the interest of bringing carbon emissions down and a lot of hui hui, no do-y? [A lot of talk, but no action]. What does it add up to in terms of practical examples? (Simon)

It was clear that participants believed that positive contributions outweighed any negatives, such as the carbon footprints CCA programs. From my past personal experience working for a CCA program, acknowledgment of greenhouse gas contributions from the extensive travel associated with consultation, workshops and awareness programs was avoided.

Workshops do however allow for the transfer of social and cultural capital, as key knowledge holders were present in one location, this often includes specialist consultants in information technology, agriculture and climate science and also those with place and cultural knowledge. It also allows participants opportunities to access knowledge resources specifically developed by programs, often referred to as 'tools'. While workshops and trainings could be transformative, with individuals gaining access to Western climate change science, education and awareness programs are also further entrenched in dominant neoliberal ideology. This was demonstrated in a workshop in Honiara supported by a New Zealand-based NGO advocating for development of a carbon trading scheme that would result in payment for carbon stored in customary-owned rainforest that was left unlogged. The presentation focused on a market-based approach advocates suggested would provide landowners with an income that would be determined from an independent audit of the stored carbon resource. Before this could happen, a lengthy bureaucratic process was required to clarify land ownership, determine the quantity of stored carbon and how royalties would be paid. When told by one of the advocates that payments for stored carbon (carbon

credits) would be similar to logging royalties, a prominent female leader from Choiseul spoke up and strongly suggested that unless people got paid more than they could receive from logging then it was unlikely they would participate. So while workshops and education programs were assumed to be benign and altruistic forums for mutual learning and transferal of knowledge, these forums were also consciously used by all stakeholders to accrue cultural and social capital, as well as facilitating the uptake of market-based CCA solutions.

Economic norms, opportunities and exploitation

Many conversations and observations reflected influences of differing economic worldviews. For example, assumptions of the economic norms of communities were often based on superficial analysis of physical resources from vulnerability assessments (Basel, December 2014; Mataki, 2013). These assessments often excluded analysis of the influences of power, authority and ontology. While the economic behaviour of individuals is often perceived as dependency, it may be more accurate to describe these motivations simply as seeking resources so families and communities can prosper. These basic needs were what Maslow (1987) considered deficiency needs, which included friendship, security and physical needs (food, water, shelter). This was expressed in the sentiment below regarding economic benefits of CCA programs:

The concern of the communities is what they can benefit from, in terms of their family, livelihood, the money that they want to receive, to get for their family needs and all that. These activities, if it's not really discussed with the communities, will not be sustainable because as I've said, they came here with a number of [their own] activities. (Paul)

However, while economic imperatives at the community level were important, participants inferred those at the international level play a more influential role in CCA programs. In the Solomon Islands, NGOs, national and central government all attempt to moderate distortions from outside economic influence, with some success. Decisions made at the international level influence community normative economic realities and community desires. However, NGOs have little choice but to respond opportunistically to the funding

available. Opportunism often referred to at the community level, is often reflected by donors as expressed by Peter below.

I think the donor agencies, unless you're right at the forefront of knowing what is coming down the pipeline, you sort of are responding to an existing portfolio of funds. So unless you are involved in the process of developing of where the funding goes, I think the NGOs normally are coming to the table once it's more or less been decided where the money is being spent. So I mean it's not an ideal situation, but often someone will say there look there is this funding opportunity through ADB or DFAT or someone, for community based climate adaptation, are you interested in it. (Peter)

Participants recognised that most global greenhouse gas emissions were generated by industrialisation in developed countries with large-scale polluting industries. They were starkly aware this contrasted with the much smaller influence off the Solomon Islands to global greenhouse gas emissions. Participants recognised this unspoken paradox that economic imperatives of other countries contributing to most greenhouse gas emissions were infrequently a topic of discussion. While this is most likely because of the limited ability to influence these countries, the moral contradictions were noticeable and concerning to participants as Paul stated below:

Solomon Islands as a nation, is just a very small island, compared to all these big continents and big countries that cause climate change. So what activities that we do, maybe it will not have any contributions for us to address emissions and all this. It's something that the communities of ours in the Solomon Islands or rural communities, I think they are not building factories, they are not building any chemical plants or something. (Paul)

Another equally concerning narrative showed a clear link between global economic forces dominating national action in long-term conservation aimed at countering unsustainable economic behaviour. While CCA and nature-based programs seek critical transformative change to build resilience, some participants considered that progress was difficult to detect and even being overwhelmed.

Whatever you say for climate change adaptation, I'll give you probably a more long term or an example of an issue like that. You will see that a lot of the environmental conservation work in this country, for the last decade, has been on Western Province,

as well as in Choiseul province. The amount of logging hasn't curtailed in these two provinces. In fact, it has really gone up. (Robert)

Dependency and self-determination

The dominance of powerful economic and cultural ideologies gives the impression of dominance from outsiders over communities with less capital and ability to influence their own development. While global economic forces may be influential, national and provincial government and communities in the Solomon Islands retained substantial power to influence programs. This came about through having power to allow or deny program access to either communities, individuals or institutions. Resource extraction narratives encountered during the research focused on the government and powerful international companies overpowering weak and less resilient communities. The converse was true; with some leaders responsible for encouraging unsustainable practices. In these cases, awareness programs on mining and logging had already occurred and leaders were therefore aware of the negative impacts of such practices. Robert summarised this paradox like this:

That's an important point. I think I read something similar to that, whereby it says logging takes place but the communities are also not doing anything. They are the ones who invited the logging companies, not the Ministry of Environment, not the Ministry of Forestry. It's they themselves. They are not also doing their part. (Robert)

However, community recourse to influence and control engagement with CCA programs was through insisting that programs follow the processes communities already have in place, much to the frustration of those implementing programs.

We arrived there and then they said, "Sorry, we cannot really work with you together cos we don't have a [ward development committee] chairman actually." You're travelling there and nothing is going..... please do this and that in the time....or take decisions. Then, you are coming back and nothing has happened. (Max)

The above comment suggests that outsiders consider existing processes as barriers to what they would like to do. However, the existence of ward development committees and other community-based processes allowed communities to create a buffer between themselves and outside agencies. In Choiseul, sending prior notification of an impending visit

in the form of a written letter, was an important way communities controlled disruptions posed by external influences. It also signals that communities have protocols to be followed. These processes give communities the power to show they were not simply passive participants and also bestows legitimacy on agencies if they were followed. In interviews, Max spoke of how he considered it easier to find interested individuals to work with rather than waiting for approval from community governance bodies that may not be functioning. He sought out and worked with individuals he considered to be worthy of his time and effort, and that he believed would be open to learning and passing on the skills he taught. However, the bypassing of existing governance structures could undermine the legitimacy, and therefore resilience of these processes. Bypassing these structures probably does little for confidence of intended CCA program recipients as mentioned earlier by Matthew and may further undermine a group's ability to exert influence through formalised governance structures.

Traditional ecological knowledge and sovereignty

Frequent references were made across CCA programs and climate change adaptation generally about the important role of traditional ecological knowledge. Emphasis is placed on Traditional Ecological Knowledge (TEK) being synonymous with cultural processes which were inherently resilient. However, what emerged suggested TEK is often relegated to the fringes of CCA programs for a number of reasons. Firstly, there is no broadly accepted definition of exactly what constitutes TEK in relation to CCA in the Solomon Islands. Examples do exist, such as the utilisation of traditional crops such as *kakake* at times when other crops have been wiped out by extreme weather events and the collection of water from sources known to provide reliable clean drinking water when a river floods. These practices were clearly delineated and tangible actions imbedded in culture from being practiced over a long period of time and as such they were practices readily acknowledged as TEK. However, the influences of colonialism, religion and capitalism, means some practices, particularly those related to environmental governance, may be less likely to be considered by outsiders as authentic 'traditional' ecological practices. The continued existence of traditional ecological knowledge in the Solomon Islands is likely to be under pressure from multiple factors including a perceived decline in importance and value, with Western and market-based knowledge

becoming more influential. In some instances, TEK may becoming less widespread as suggested by Max when referring to his encounters with TEK in Choiseul.

Yeah, in all this time, I have met maybe two or three really old people, where you really get information and that really have this information, but not in the next generations, they don't have the feeling. (Max)

Also, with climate change leading to more unpredictable weather, knowledge relating to natural processes is starting to become more unreliable. As traditional ways of understanding the environment become more unreliable it is likely some will be discarded.

The resulting changes in planting and harvesting seasons have started to affect household food production. The women and men in these communities can no longer fully rely on their traditional knowledge of known weather patterns and the availability and abundance of resources. (GIZ/SPC, 2015, p. 1)

However, what is more likely is that traditional ecological knowledge is evolving and adapting with existing knowledge persisting depending on its utility. New forms of knowledge would be amalgamated if useful and can withstand a changing climate (Ensor et al., 2018). So traditional ecological knowledge is far from dying knowledge or knowledge stuck in a '*time bifo*'¹⁵. It is knowledge already present within communities and evolving as new information is incorporated. The comment from Paul in Choiseul highlights this, with those in communities having benefited from CCA education and awareness programs during the proceeding five years.

These are the activities [CCA program activities] I think are important for the communities. But otherwise those in the communities understand already, what they should do suppose this crop doesn't grow good, we will plant this crop; yeah. They have all the choices, in terms of adapting to the impacts of climate change. (Paul)

Many of the issues around TEK related to a desire to control knowledge. To ensure perceptions of legitimate influence, CCA programs sought to accrue cultural and social capital through aligning programs with TEK where possible. This process was far from a one-sided

¹⁵ Solomon Pidgin for a 'time before'.

process dominated by donors and individuals trying to advance CCA programs. One participant provided an example of how the generation and control of knowledge can occur at any level. Jane provided an example of how CCA program participants were redefining some of the terms commonly used in CCA programs and therefore reasserting control over knowledge creation:

So when I am talking about planning actually somebody ask me so you are shifting away from the term mainstreaming and into the term instreaming; what do you mean? So now we have defined instreaming it's looking..., instreaming in the sense that we focus on an activity-based approach rather than an overarching approach like mainstreaming, ok, policy, budgets and all these things. So when we talk about instreaming we just look at the planning document, ok which area do you want to instream climate change adaptation and disaster risk reduction. (Jane)

Contract culture

Contract culture was noticeable at the higher program level, such as between donors like Ausaid, NZAID, and GIZ, and implementers of CCA programs such as UNDP and the Solomon Islands Government. The short-term contract periods of most CCA programs, which typically ran for no more than five years, such as the UNDP PRRP program, were often referred to in negative terms by both Solomon Islanders and those from other countries. The ripple effect of contract culture was noticeable across a range of groups and individuals involved, with varying forms of expression. One such expression was the influence of short-term employment contracts on job security and building and maintaining relationships. These relative short-term employment contract periods typically aligned with program lifespans.

Contract culture is a symptom of the trend toward a more liberal political system that sees the free market as the best provider of economic solutions. With this heightened reliance on the free market there is less need for government to supply services to society; so rather than governments employing staff directly they have become contract managers, contracting out services the state requires (Stott, 2015). The move towards contract culture also sees the move away from the provision of grants to the provision of services based on more formal contractual relationships (Morris, 2000). Contract culture according to Morris (2000) includes the specification of services to be provided, fees to be charged and provisions setting out the legal obligations each party accepts in order to fulfil the purposes of the contract. So a

prominent principle in contract culture is the capacity or the ability to negotiate to determine contractual relationships. Contract cultures typically increase uncertainty, when compared to grants, which traditionally have fewer conditions attached (Morris, 2000). Stott (2015) suggests that NGOs are different to contracted charities due to the separation they are able to claim from the influence of government. However, core elements of contract culture were still detectable in the context of the NGOs, CCA programs and individuals that were part of this research, albeit expressed in a modified way compared to the government and social agency relationship referred to by both Stott and Morris.

Contract culture and audit culture appeared to be mutually reinforcing. Audit culture was facilitated by the requirement to monitor and evaluate work that had been conducted during the lifespan of a particular CCA program, with the CCA program being bound by a contract between a donor (Ausaid, the World Bank, etc.) and delivery organisation (UNDP, SPREP, etc.). Individual staff were expected to deliver specific outputs while under contract and these were audited through monitoring and evaluation processes. The success of delivering these outputs influenced future contracts or contract extensions. This focus on outputs was expressed through what participants regarded as project 'box ticking'.

The cycle of contract culture was further perpetuated when priorities of provincial governments and donors did not align. Program priorities were often focused on providing evidence of completion of predetermined outputs rather than supporting provincial projects. However to do this would have required strong working relationships, as provincial projects involved elements of complexity relating to landownership or community participation. CCA programs working within short timeframes and bound by quite clear start and end dates meant building these relationships was difficult as there was limited time or motivation to invest in building these relationships. However, one donor regarded long-term relationships as at least as important as program activities.

Short termism and longevity

The short-term nature of CCA programs was expressed as a defining characteristic and an area of concern for a number of participants. CCA program staff usually had employment contract terms that were linked to program lifespans. A noticeable manifestation of this was insecurity of employment. In at least four interviews, participants on short-term contracts or

contracts that were coming to an end were reluctant to provide critical reflection on programs they had been involved in. These insecurities were exemplified by this interview with Adam:

SB: When you finish here what will you do?

Adam: When I finish here, that's a good question. Why are you asking me that? (laughs).

SB: Just interested.

Adam: I am not sure yet, for now I am just looking forward for Christmas holidays and rest a bit first. I have been applying for jobs. Sending out applications for vacancies. Which one is successful then I guess..., so if you have any vacancies I will apply.

Even though employment was often insecure for many individuals which may have prompted them to be cautious in providing critical program reflections, programs made efforts to mitigate perceptions of contract impermanence through the use of positive marketing imagery and messaging in signage (figure 5), vulnerability assessments, 'tools' and other media. Positive corporatised imagery was employed to build the prestige of the organisations involved and secure further funding to extend a program or create a link to a new opportunity. Successful marketing that provided new opportunities would also create security of employment for contracted staff.

Figure 5: CCA program signage in Choiseul (Source Scott Butcher)



The importance of long-term relationships emerged with participants positively referencing the relationship between The Nature Conservancy, Lauru Land Conference and Choiseul Provincial Government. There was consistent reiteration that this relationship was different to relationships with programs such as the CHICCHAP program or others. Those within The Nature Conservancy and Choiseul Provincial Government were keenly aware of the importance of relationships:

Due to the Ridges to Reef concept, the approach that has been taken by The Nature Conservancy and Lauru Land Conference, we are also a member of the coral triangle and now Arnavon [*Arnavon Islands Marine Protected Area*], and so it's a long term commitment these two organisation they're realising. Because as you know, natural resource management, it is something that we should also support it... It's something that will assure future generation of the continuous living, the sustained living in the future. I think that long-term commitment in terms of natural resource management activities, it's very good. (Paul)

This interview excerpt speaks of an appreciation of the Ridges to Reef program due to the long-term effort and partnership that has been fostered between people in Choiseul and The Nature Conservancy. A foundation of mutual trust and respect had been instrumental in the adoption of messages of the Ridges to Reefs program, a hybrid Western and traditional natural resource management approach. So relationship longevity and continuity was important, and consequently, those seeking to gain leverage from existing relationships were perceived as less legitimate and an imposition:

It seems that all these organisations that come in try to replicate activity of The Nature Conservancy and the Lauru Land Conference. They [*other CCA programs*] seem to duplicate activities... So I think a seed that has been planted by The Nature Conservancy and Lauru Land Conference is something that I think will build the capacity or the network that The Nature Conservancy and the Lauru Land Conference have already. (Paul)

Audit culture - vulnerability assessments and audit 'tools'

I said to them, what's your mechanism for this climate change committee? Guadalcanal Province Climate Change Committee. Where's the mechanism for it accessing funds? Where's the mechanism for accessing the political [provincial] government, the political [provincial] secretary? There is no mechanism. It was like, no no we gotta create a committee, we gotta tick the box. (Matthew)

Audit culture is where enumeration, ranking, and governance meet or to put it another way, where the moral and financial meet (Shore & Wright, 2015, p. 422). It is a tool of neoliberalism and widely used across many sectors to reward productivity and punish underperformance, therefore by its very nature is punitive and undermines trust in professional judgement in favour of formal auditing and inspection systems (Shore & Wright, 2015, p. 423).

Audit culture was found to influence of an array of bureaucratic process of those implementing or funding CCA programs. Participants often spoke of influences from above, either at the national level or regional level being drivers of program design, implementation and ongoing engagement. CCA literature attempted to paint a picture of interventions being driven from the ground up by making village voices, communities and even provincial governments prominent, with those involved implementing CCA programs wanting the best results possible for stakeholders where they were implementing. However, these good intentions were often compromised by time and budget-bound bureaucratic audit processes, exemplified by the PRRP and its development of 'tools' such as risk screening guidelines. These tools were used as quantifiable determinants of success, an approach followed by other CCA programs. Some participants considered the number of projects delivered as more important to CCA programs than program quality or suitability. From interviews however, the development of tools may have satisfied the requirements of the proponent, but there were often concerns about their suitability for use. Concern existed including the appropriateness of new risk screening tools when risk screening processes already existed. It was widely accepted that the use of tools may not outlive the programs advocating them as they were frequently regarded as overly complex or simply too long winded. Matthew voiced some of these concerns clearly:

Part of the world view, external players, they assume there's a capacity problem, they assume that things don't work, so they introduce a solution without understanding the problem. All these manuals and reports are solutions coming from outside. The PRRP was an external solution to a problem that they didn't understand. There's a tick box mentality. We gotta deliver, and the currency of the tick box is reports delivered, training programmes delivered, bums on seats are the two primary ones. (Matthew)

The urge to develop bureaucratic systems in a relatively rigid and predetermined way was highlighted in vulnerability assessments that expressed community vulnerability in an

empirically quantified and logical format that prioritises economic exposure and food security. Data collected and published was a simplified representation of complex communities, drawing heavily on those elements which were externally quantifiable, the etic rather than the emic realities of the subject groups. Vulnerability assessments were seen as necessary 'snapshot' extrapolations of communities, as access to communities was often expensive and time consuming. As a result, vulnerability assessments and associated consultation were not only reflective of community vulnerability but also donor ideology and development desires. Vulnerability assessments were considered resources that were intended to positively influence communities that had been involved in their development. They were also another output or 'tool' that generated symbolic and social capital for those championing them. This assertion is supported by subsequent programs initiating vulnerability assessments within communities that had already been completed them. This appeared to undermine the legitimacy of the process and the integrity of those conducting it as succinctly summarised by the Rebecca's comments below:

Also just reflecting on the question that you asked me I think also a lot of the climate change programs I have been involved with or seen have been donor driven not community driven so the donors decide that they need more vulnerability assessments and things like that all the time and it's like, look we don't need to do more vulnerabilities assessments. So a new donor will come in and say we need to do more vulnerability assessments even though that community may all have been interviewed by the donor before. (Rebecca)

Prioritisation and ranking

Development priorities, identified through medium-term development plans and other planning processes, were often hierarchically ranked from highest to lowest priority with the intention of addressing these priorities sequentially. Participants highlighted that CCA programs often promoted climate change as the most important development priority. From even the earliest stages of engagement, this underlying ontological position led to coercion by CCA programs to determine climate change as the highest priority.

Working examples of this were observed in at least two instances. The first instance was during the early stages of engagement for the CHICCHAP program consultation in Choiseul in late 2012 when awareness for this program commenced. I believed I had some level of understanding of the development desires of the provincial government and some

communities after these had been expressed through consultation as part of the development of the Choiseul Province medium term development plan. While a broad range of needs were expressed by people from across Choiseul, a reoccurring and subsequently prioritised theme in the plan was that of economic uplift through development. Initially this was nebulous and difficult to specifically define as it was often not expressed in purely income-related terms. However, it soon became apparent that people wanted access to resources that would allow them and their families to participate in the mainstream modern Solomon Islands economy, while maintaining links to culture and *kastom* practices. Participation would allow people to lead the lives that they want. This was best expressed by GP.

If you have the chance to see the provincial government development planner, I understand that you were involved with developing the provincial medium-term plan in the past as well. If you remember, the priority of the provincial government is community economic infrastructure and related services. That's the top priority. That came out of the ward consultation tour around Choiseul. (Paul)

At the time, a Choiseul college and I made two suggestions of activities they could pursue. One suggestion was a carbon credit scheme such as REDD+ which would provide financial incentive for landowners to retain established rainforest. The other was to provide support to build the capacity of the Choiseul provincial government. There was some conciliatory discussion around both these suggestions and on how the program will deliberatively work in conjunction with the provincial government. In the end, these suggestions made little impact on how the CHICCHAP program was implemented. This inability to acknowledge or adapt to locally identified development priorities is just one example of CCA program scope and direction being pre-determined even before arrival in the intended place of implementation. In an interview, Peter regarded raised his concern about predetermined priorities this way:

So it's a funny one, you get a pot of money to do climate change work, then you do the vulnerability assessment and then climate change comes out like number 7 or 8. So ok, what's your biggest issue? Well in parts of Choiseul and Isabel it's mining. (Peter)

However once programs were operating on the ground, existing cultural, political, environmental and economic factors redirected, moderated or even enhanced the original program design so it more closely aligned with priorities of the intended recipients. CCA

program staff usually accepted that CCA program priorities needed to work with already pre-existing ranked community priorities if they were to be effective. However, provincial government staff were far more conscious that priorities communities had already identified provided them with their own strategic direction and therefore pre-existing commitments.

Those activities, I think, needs to be especially the priority approach, like people of the community should be given the chance to determine what activities they will like to implement in the communities. You know that all these communities have their own programs, so their own priorities. (Paul)

This focus on infrastructure did not merge well with CCA programs, which consider CCA a 'cross cutting issue', and therefore develop projects in areas such as training, education and other forms of capacity building. This often creates tension between groups in reconciling priorities. Choiseul Provincial Government ranked priorities with consideration of limited budget resources, anticipating that provincial plans could be used as marketing tools to elicit donor support to address ranked priorities. So ranked priorities of CCA programs create added pressure on resource constrained provincial governments.

Budgeting, monitoring and auditing

Discourse relating to fiscal responsibility and financial planning of CCA programs were perceived as important program influences. One participant, Jane, mentioned one instance where restricted funding did not accommodate the full costs for project mobilisation through provision of inadequate budgets for transporting project materials. Peter noted commented that requirements to spend budgets within a specific timeframe were more important than how or what it was actually spent on. Participants also mentioned that short time frames for dispensing project budgets were occasionally unrealistic and the desire by donors and CCA programs to dispense funding quickly may also have some distorting impacts. Some funders were dispensing funding in larger amounts rather than numerous smaller grants in an effort to create change at a larger scale. Although those working on CCA may have had significant control of the resources they dispense, they were also heavily influenced by the original provider of funding. Peter summarised those influences this way:

I think the donor agencies, unless you're right at the forefront of knowing what is coming down the pipeline, you sort of are responding to an existing portfolio of funds. So unless you are involved in the process of developing of where the funding goes, I think the NGO's normally are coming to the table once it's more or less been decided where the money is being spent. (Peter)

Donor funding typically was influenced by four different institutions (international donor, implementing agency/CCA program, national government and provincial government) before being dispersed at the community level, with each of these groups having their own expectations on how funds were monitored and accounted for. So while community resilience was often the priority when it comes to funding intentions, communities were at the very bottom of an intricate hierarchy of processes associated with distribution, monitoring and evaluating of CCA program resources. The majority of power was exerted by those who had the greatest influence in resource allocation. Ultimately, how resources were used and allocated was the responsibility of the implementing CCA program which oversaw resource allocation, monitoring and evaluation. The imperative of project tasks being achieved within on time and within budget was overwhelming, limiting the ability to develop program activities that were both durable and meaningful to provincial governments and communities.

I think the problem with some of these larger grants, like the ones that you are talking about, is that they are written before they touch the ground and when you get someone who's paid a lot of money to project manage and they just want the deliverables. It doesn't matter if that community has had four previous vulnerability assessments, if it's written in there that they are going to have another vulnerability assessment, that's what someone has to do. (Peter)

Donor and CCA programs believe that well developed monitoring and evaluation plans enable auditing of the progress and outcomes of programs so maximum efficiency is gained from limited resources spent, as such substantive efforts were directed towards making sure this is the case. When previously working with the UNDP PRRP, substantial effort was put into the development of both an annual work plan and a monitoring and evaluation plan. The process for developing both plans required extensive input from all staff engaged, with more meetings dedicated to developing the monitoring and evaluation plan than almost any other activity undertaken. This monitoring and evaluation plan was typical of most development programs so they can effectively evaluate program progress. However, time taken to prepare

this monitoring and evaluation plan came with a high opportunity cost for work on other tasks such as building relationships with communities or working in the field with those who had already expressed a need for help as determined through previous planning exercises, such as provincial government medium-term development plans or previous vulnerability assessments.

Comprehension and language of CCA and DRR

CCA programs utilised terminology that was specific to the realms of emerging CCA discourse and closely associated DRR. Participants had widely varying views on how well this language had become embedded in everyday climate change discourse and Solomon Island culture. Some suggested that many of the key concepts such as adaptation, mitigation, vulnerability and resilience were readily understood by those that participate in CCA programs. Adam had this to say in relation to the uptake of these terms:

I would say people have an understanding of those terms, some sort of understanding, because they are willing to get involved in those activities. More or less they have some sort of understanding and can relate to it. That is why they are willing to engage. (Adam)

But Adam also believed that there is a need to adapt the language of CCA to be context specific.

But as a way going forward I would suggest for those terms to be, how do you say it, for a local language vocabulary. Using a Choiseul word to describe it in language. I guess that would be a better approach as well going forward. (Adam)

At an international and regional level, language is developed and deployed to serve the purposes of those operating at that level (Brock-Utne & Garbo, 2009). However, for Solomon Islands climate change programs, the technical language used is poorly suited to the cultural context. This is reflected in underlying assumptions that the need for less diverse terminology inferred moving from a complex developed cultural context to a much more simplified local culture.

They go and the poor old country says, “I understand what you’re talking about but it doesn’t fit me.” They [Donors] say, “They don’t understand what I’m talking about.” There you have the power imbalance. I assume you don’t know what I’m talking about. This poor bugger says, “It’s irrelevant for us, we don’t need 10 definitions of risk, which came out of the Hyogo framework for action. We have two definitions of risk. What you’re doing doesn’t relate to us. (Matthew)

This difficulty of reconciling language that was suitable at an international level to make it suitable for the Solomon Islands cultural context was acknowledged by those involved in international climate change meetings.

This is also part of our attempt to simplify the languages that are being used so that we align those that are linked together. We align them and put them together. Those that are different, we keep separated. It’s definitely an issue. Actually, I’ve just spoken on this very issue at the recent COP, where I expressed real dissatisfaction over this (Robert).

The desire to embed complex terminology as part of climate change adaptation programs facilitated exclusion of those with different ways of conceptualising and responding to climate change, meaning those controlling and defining the language have disproportionate control of the broader CCA agenda. Terms such as resilience, adaptation and mitigation are spread throughout CCA literature, with the dissemination of this terminology used as an informal indicator that stakeholders had been exposed to CCA program ideology and were therefore better equipped to respond. As Shore and Wright (2015, p. 422) argue, words such as transparency, efficiency and effectiveness were part of the creation of new audit culture ideologies. Parallels therefore exist with words like resilience, vulnerability, adaptation and mitigation, which are encumbered by positivist Western science ontology by being intentionally reductionist in framing a complex subject, failing to reflect the culturally specific ways climate change is conceived.

Perceptions of cultural inadequacy and deficit

Cultural deficit thinking has its origins in educational research, referring to a critical lens that uses values, race, behaviour and social economic status in colonially inspired deficit themes (Valencia, 2010; White, 2014).

The deficit thinking model, at its core, is an endogenous theory—positing that the student who fails in school does so because of his/her internal deficits or deficiencies. Such deficits manifest, adherents allege, in limited intellectual abilities, linguistic shortcomings, lack of motivation to learn, and immoral behaviour. (Valencia 2010)

While some authors believe cultural deficit thinking may be considered a pseudoscience (Valencia, 2010), participants frequently mentioned deficits that were impeding the country's progress towards becoming 'developed'. Deficits fell into two broad themes, first it was the perception of deficit in donor and Solomon Island culture, and secondly the capacity of government systems to be responsive to development challenges, not just climate change. The first area of deficit that was frequently referenced by participants was that of the individual, with individuals frequently lacking sufficient education, training or financial or other material resources to be able to pursue effective CCA responses—what Pierre Bourdieu refers to as economic capital (money and property) and social capital (acquaintances and networks) (Swartz, 1997, p. 74). Participants spoke about what they perceived as intrinsic deficits within broad skills and knowledge capacity. These expressions of individual deficit were linked to an overarching perception of cultural deficit by both CCA programs and Solomon Islanders reflecting on their own culture that included jealousy (not wanting others to succeed), *Wantok*¹⁶ culture (assisting your relatives and family to succeed without merit-based considerations) and dependency (unwilling to assist CCA programs to implement projects). Due to deficits in individual capacity, donor programs sought to build capacity of participants through various training exercises, often in the form of short workshops.

However, some training activities intended to implement certain tools, particularly risk assessment tools, which were often not useful outside of the program-specific context they were designed. Tools closely resembled consumer products, with expectation of a short lifespan when future CCA programs developed further tools. While various workshops and trainings may have led to a beneficial transfer of knowledge and capacity building, which was acknowledged by Paul in the following quote, participants inferred that building more meaningful change may have been something else entirely.

¹⁶ *Wantok* translated means 'one talk', which infers those that are closely related.

So that is why the coming of all these organisations, somehow it is building the capacity, the technical know-how of how to do things and so it's good; but what I think for making it differently is utilising now the existing set ups that stay with the people already, and then we will realise the impacts of these activities. (Paul)

This quote suggests there were benefits to people in Choiseul from the CHICCHAP program in building capacity and technical knowledge that could be used in the future. It was not apparent that participants perceived this new capacity as being useful to challenge power structures that facilitate unsustainable activities that exacerbate vulnerability, such as logging and mining. Certainly, training events transferred technical knowledge about climate change and 'tools' that could be used to plan and adapt. None of the interviews indicated that training or workshops ever critiqued the neoliberal status quo that plays a significant role in climate change or provided guidance on more meaningful civic involvement in government. Training and workshops did change perceptions of deficit towards those that participated regarding comprehension of climate change, but it was unclear if perceptions of cultural deficit beyond just climate change comprehension were greatly impacted.

Climate change programs appeared to operate with unreconciled contradictions that perpetuated value judgements of inherent weaknesses within Solomon Islands culture and society. One perpetuated ontological approach was that the economic ideology in the Solomon Island contributes to climate change vulnerability. One participant referred to the abundance of rainfall, good soils and a stable climate, which should allow people to grow 'anything', but the reason they were not taking advantage and exploiting these opportunities for development was simply because people were 'lazy'. There appears to be some inherent contradictions in this response. Firstly, there is an assumption that individualistic economic empowerment with little regard to community or other wider social networks is a necessary or even desirable prerequisite for climate change resilience. Secondly, it is also founded on an assumption that economic security will reduce vulnerability with an increasing number of people having the financial resources to insulate themselves from natural hazards and other climate change induced vulnerabilities. This focus of CCA on economic vulnerability may be misplaced, as vulnerability is only partially related to the resources people have and substantially, the cultural and social networks people have. One participant noted that programs 'do not come with any cultural understanding' in reference to the blind spot programs have towards the contribution culture makes to resilience. Participants frequently

expressed people were increasingly dependent on donors. This belief was most often expressed by outsiders, but Solomon Islanders associated with CCA programs were quite clear they considered dependency and a hand-out mentality was becoming much more noticeable.

The second area where perceptions of deficit were uncovered was in public and private sector systems. Deficits in these areas were considered to be widespread with references throughout the field research period. Participants and others often spoke about the difficulty in excelling professionally within in the Solomon Islands due in part to *wantok culture*, which saw favouritism of tribal and family connections over others more qualified for particular roles. Another example was the deep dissatisfaction with the country's members of parliament who received substantial rural constituency development funding that was dispersed by constituency development officers directly responsible to these members of parliament. This has resulted in poor financial management and control, which has facilitated corruption (World Bank Group, 2014). While people were aware financial mismanagement happens elsewhere, this form of financial mismanagement by members of parliament was seen a defining feature of the Solomon Islands political realm.

International organisations frequently reaffirm deficit as deeply embedded in systems of the state as they believe that strong and efficient bureaucratic systems were lacking. The World Bank's 2014 report *Solomon Islands Towards Better Investment* summary states the following in relation to donor-funded programs established to assist with rural development:

.....These programs, whether donor or state funded, continue to be one of the main instruments for addressing the **logistical and capacity challenges**¹⁷ of service delivery as well as a significant source of cash in rural areas. However, this **funding is fragmented and often politicized**, undermining the effectiveness of service delivery itself. As a consequence, the system is **too multi-layered for effective coordination and policy direction**. The result is a **vicious cycle of weak government services, poor policy, and a continuing reliance on donors**. While large amounts of funds are spent on small and medium-sized capital expenditures, there are limited systems of financing in place for recurrent costs and ongoing maintenance. (World Bank Group, 2014, p. xii)

¹⁷ Authors emphasis for words in bold

It was a widely held belief the multitude of issues faced by indigenous Solomon Islanders represents weaknesses in cultural identity. Consequently, the premise of CCA programs was that Solomon Islands society and culture lacks the ability to be resilient in the face of the climate change. Somewhat contradictory to donor narratives, aspects of Solomon Islands culture did have high levels of resilience, even though official statistics show the Solomon Islands ranked low in the UNDP Human Development Index (UNDP, 2018a). Practices such as localised agriculture, *sup sup*¹⁸ gardens that surround most rural homes, utilisation of local bush materials such as sago palm roofing and traditional fishing practices were all examples of resilient traditional practices. Popular conceptions of resilience in a developed nation state infer an increasing level of Western technological and infrastructural complexity, irrespective of its sustainability or appropriateness (Heinberg, 2007; Westley et al., 2011). This infrastructural complexity was demonstrated by individuals who saw a ‘copper house’, referring to a house that is a more permanent structure with a corrugated iron roof, as a sign of personal and family economic advancement. Even though in many cases these houses were less suited to the environment than leaf houses which were cheaper to build, cooler to live in and easier to maintain.

Max demonstrated a sometimes present outsider ideology when he described how he perceived himself as a privileged and benevolent outsiders with skills, experiences and knowledge to bestow on those he considered less privileged. This highlighted a reflection occasionally present that perpetuates deficit themes.

I think when you’re born in a Western or industrial country, in our words, you are already born with a golden spoon in the mouth so because you are born there, you have better chances about education and so on. For me, it’s interesting, how I wanted to make use of it, to help others. That’s the idea. (Max)

Conclusion

Perceptions of the various elements of CCA programs were varied, but assumptions that CCA programs were simply modern iterations of benevolent progressive development were unfounded. Perceptions of participants reflected observations of neoliberal worldviews

¹⁸ *Sup Sup* gardens was the local word used for a small garden in close proximity to a house.

influencing the way in which CCA programs operate. This is founded in contract culture and audit culture but extends wider into relationships and the legitimacy and trust that is placed in relationships. Embedding of audit and contract culture further entrenched a culture of bureaucracy and at times, corporatisation of CCA programs.

For CCA program stakeholders, advocates of CCA programs failed to realise the significance of stakeholder perceptions of a wide range of important factors influencing CCA programs. This included the importance of environmental observations as part of narratives of climate change, alongside traditional ecological knowledge. Perceptions of participants in providing insight into the role that of religions played in communities and potentially could play in supporting CCA messages. This approach also provided insight into the importance of provincial and traditional governance, and therefore ultimately the complexity of community power relationships. More importantly however is not that CCA program ideology showed little reflexivity to perspectives of CCA stakeholders, but that these perspectives never facilitated reflection on underlying implementation ideology. When CCA programs attempted to spread CCA program discourse and ideology through harnessing existing influential groups or individuals, it appeared extractive, with donors seeking to access social and cultural capital, including established power and relational networks.

A distinctive element of contract culture was the insecurity of short-term contracts which appeared to stifle critical analysis of CCA programs. The rise of CCA programs may have entailed limited security for some employees due to the fixed nature of their contracts, to others they offered meaningful and liberating economic empowerment in locations where employment was scarce.

Audit culture perpetuated a focus on monitoring and evaluation process often regarded as simply a box-ticking exercises. Monitoring and evaluation activity, as with much program administration often was often perceived as outputs or at least productive program activity. Contract culture and audit culture appeared to be mutually reinforcing, with contractual arrangements often requiring audit methods to provide justification of what had been achieved.

Perceptions of Solomon Islands culture as being deficient was widespread and partly symptomatic of the Solomon Islands not embodying the types of economic development espoused by donor countries and the global community working on climate change. There were a number of cultural reasons that contributed to perceptions of deficit within both

Solomon Islands and donor culture and these are explored more in Chapter 6. However, a hierarchy of climate change conceptualisation with terminology and concepts of resilience embedded in Western science was considered more resilient than those embedded in nature and indigenous Solomon Islanders perspectives. Additional to this is the reinforcement of the Solomon Islands having deficient public and private sector systems which were weak with limited functionality and therefore lacking resilience. Donor programs were perceived as being successful in some specific CCA interventions. This was noticed particularly in training implemented in Choiseul to raise awareness of climate change. Some of these training events left behind processes that provincial governments could build upon. Noticeably there were many areas that CCA programs failed to analyse, such as neoliberal economic influence and its influence on power relationships and cultural worldviews. Further ethnographic research would help determine how power relationships and cultural worldviews influence CCA programs.

Chapter 6

Conclusion

Introduction

In this thesis my aim was to examine the perceptions and relationships of those who are associated with climate change adaptation (CCA) programs. Past anthropological work in the Solomon Islands, such as the work by Ian Hogbin (Hogbin, 1939, 1964), focused more on the culture of indigenous groups and less on the cultural influences associated with outsiders that engaged with these groups. This research aimed to focus on the often unspoken and unacknowledged influences of CCA program culture. To do this, I sought to determine the perspectives of those involved with CCA programs to understand their views of CCA program implementation, the treatment of participants, and also alignment of strategic priorities and development aspirations.

To achieve these outcomes, the research required an approach that could adequately elicit the concerns of those individuals involved. Therefore, a semi-ethnographic approach was used that was supported by case studies of three specific CCA programs. These were the Choiseul Integrated Climate Change Program (CHICCHAP), CRISP (Community Resilience to Climate and Disaster Risk Project for Solomon Islands), and PRRP (Pacific Risk Resilience Program), (Denis Jean-Jacques Jordy; UNDP, 2015, 2016; USAID/GIZ, 2018). Data was collected through semi-structured interviews, informal discussions, participant observation and a wide array of literature including journals, books, newspapers, reports and other sources. Data from semi-structured interviews, informal interviews and participant observations were categorised using Thematic Analysis. Emerging dominant themes then became the focus of further analysis.

Analysis of these dominant themes is explored in Chapter 5, the section that summarises the main findings of this research. This final chapter proceeds to analyse how these findings represent challenges to CCA programs. It then continues to look at the implications of these challenges for future research. Some specific recommendations are made for improvements to future CCA programs.

Summary of main findings

The findings of this research show that CCA programs are heavily influenced by neoliberal ideology. This is expressed in a number of diverse ways, through initiatives that replicate the values of the groups proposing programs often more than those of the intended recipients. These hegemonic (top-down) influences that guided CCA programs impacted on the ability of those involved in building constructive and enduring relationships. However, there were some exceptions where self-determination pushed back against this hegemony as shown in efforts by those involved to assert their identity and agency.

This hegemonic neoliberal influence was detectable through perceptions of cultural inadequacy and deficit, aversion to reputational risk and even efforts by CCA programs to co-opt religious institutions or traditional governance systems to advance program messaging and delivery. However, it is not entirely a one-sided process of a dominant program influencing a weaker recipient, as stakeholders at the community, provincial government and national government levels also frequently exert influence over donor hegemony. Examples of this were expressed through stakeholders challenging project-related systems that donors had planned to implement, individuals seeking to establish political parties to influence future policy related to interventions and communities determining they no longer required donors for legitimisation of natural area protections.

The findings also revealed differentiation on the value placed on various forms of knowledge integral to CCA programs. Contradictions existed between reified traditional ecological knowledge (TEK) often referenced in academic literature and espoused occasionally by CCA programs, and recent observations of climate change that are not included in this traditional knowledge base. This was reflected in the low importance CCA programs placed on first-hand observations of climate change by Solomon Island stakeholders. The imbalance was further pronounced by a higher value provided to empirical scientific explanations of climate change. Interestingly, what actually constituted TEK in the context of CCA programs was vague and not definable within this research.

Similar contradictions extended to perceptions of weaknesses within Solomon Island culture when compared to that of developed countries. While donors traditionally consider vulnerability of the state due to weakness in governance systems, this research revealed that

vulnerability was perceived by participants as being fostered by assumptions of cultural inadequacy and deficit. This was encapsulated in commonly used terms that expressed social behaviours such as 'Wantok culture' (favouring relatives over others) and 'jealousy' (impeding others from succeeding). Participants frequently expressed that there was growing dependency, with less community interest in assisting programs, reinforcing perceptions of cultural deficit due to clientelism.

All of these factors suggested a weakening of social capital. Although social capital is central to relationships in the Solomon Islands and recognised as such in CCA program narratives, it is not incorporated in a way that accurately reflects this importance. However, Bourdieu's description of social capital details the importance of networks and acquaintances in traditional kinship relationships:

A heritage of commitments and debts of honour, a capital of rights and duties built up in a course of successive generations and providing an additional source of strength which can be called upon when extraordinary situations break in upon the daily routine (Bourdieu, 1977, p. 178).

As the findings show, resilience and strength in relation to adaptation capacity of Solomon Islands stakeholders were infrequently acknowledged by those from outside. Differences between CCA program and stakeholder worldviews were illustrated through the language used. While program recipients often understood CCA program terminology, some participants believed that terminology relating to climate change at both the international level and program level needed to be tailored to be appropriate in local settings. For this to happen, there needed to be better comprehension of traditional language and *kastom* to assist outsiders in conceptualising adaptive solutions and local concepts of resilience.

While some of the ways in which CCA programs were implemented could be attributed to unconscious bias, other aspects were clearly conscious actions employed to secure what Bourdieu regards as "economic capital (money and property), cultural capital (cultural goods and services, including educational credentials), social capital (acquaintances and networks) and symbolic capital (legitimation)" (Swartz, 1997, p. 74). He considered relationships were determined by capital being transferred, invested and converted, with individuals drawing upon various forms of capital in which to enhance and maintain their positions (Swartz, 1997). Symbolic capital in particular was critical as was demonstrated by

the content of material produced such as signage, program literature or workshops that provided justification for programs. Analysing the perceptions of capital can help explain how and under what conditions individuals or organisations utilise capital to maintain or enhance their position. The language of CCA programs therefore also represents symbolic capital that is used to gain legitimacy for CCA program interventions.

Identification of main challenges

A central challenge that emerges is the lack of reflexivity of CCA programs proponents in understanding their own cultural influence and worldview. These influences are not only embodied by the individuals associated with the program but are also the guiding ideology of the programs. This can be seen in the role that language and bureaucratic systems play in reaffirming Western systems of development, particularly neoliberal concepts of development. Associated with this was an inability within CCA program hierarchy to conceptualise how local experiences of climate-change, religious norms, governance processes or other areas of *kastom* reflect the realities of communities, provincial, and national government are facing. Certainly the lived physical realities (the etic) are reasonably well understood by development programs, but the internally experienced realities (the emic), much less so. Breaking away from traditional approaches would be difficult as they are firmly influenced by neoliberal ideology and its associated processes and systems. Transformative change is often mentioned as a requirement to address climate change; however, CCA programs that were a part of this research infrequently challenged power structures that perpetuate the continuation of the unsustainable economic behaviour that creates or worsen climate change, such as logging. CCA programs are therefore confined to do what they can within a non-politicised framework, but as this research indicates, change that challenges existing political and economic systems requires much more than programs implemented in their current format.

Implications for future research

This research shows that understanding the perspectives, roles and relationships of those involved in CCA programs can shift the focus onto their intended recipients, revealing perceptions of those who do not normally have a prominent voice (Bonatti et al., 2016). Further research adopting this approach could also explore how power relationships and cultural worldviews are influenced by CCA programs in the Solomon Islands (Xue, Hine, Marks, Phillips, & Zhao, 2016). This type of exploration could greatly assist in understanding better any power imbalances between stakeholders. It may also reveal more specific details on how traditional ecological knowledge and Western forms of knowledge are accrued and traded as symbolic, social and economic capital. It could also provide an opportunity for a wider diaspora of Solomon Islands identities to emerge, which could more accurately illustrate existing cultural diversity.

Recommendations for improvements of CCA programs

From this research, it is clear that there is a need for better determination of the role that perceptions play for groups involved in CCA programs as this is likely to be a determining factor in how success of a program is perceived. This process of 'untangling' of the complexities of vulnerability has been attempted by CCA programs, but better care needs to be taken when doing this (Petheram et al., 2010, p. 688). My own experience working in the Solomon Islands has shown me that what people communicate and how they respond can appear unrelated. Most development interventions do not have the capacity for extended communication with participants. One way to improve this would be to engage with participants in a much more meaningful way. This requires CCA programs to firstly allocate more time to programs and particularly to building relationships. It means challenging the short-term nature of CCA programs and extending timeframes out so that average timeframes of only 3.23 years become the exception rather than the norm (McNamara, 2013).

Programs also need to adopt a more intentional provincial presence as has been shown by The Nature Conservancy in Choiseul Province. Alternative forms of measuring

program outcomes through incorporation of criteria that can measure relationships and the strength of those relationships will also be needed. More importantly, a perceptions-based approach allows for something else: it allows for an understanding of how program culture and the culture of stakeholder groups may be in conflict in a way that more traditional approaches might not be able to do. Donors themselves are beginning to recognise that change is required.

Solomon Islands should continue to advocate for more flexible modalities, such as direct budget support and national climate change trust fund arrangements. This will supplement the inefficiencies of a project based approaches (Pacific Community, Pacific Islands Forum Secretariat, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, & United Nations Development Programme, 2017, p. 40)

Conclusion

As an area that has received very little prior attention, this research sought to establish the role that perspectives and relationships play in influencing CCA programs. Recognising that these are influenced by a multitude of factors within the bounds of culture and custom, an ethnographic approach, supported by case studies, was best suited to explore this subject. The findings emphasise the most prominent influences on perceptions are those that have a neoliberal economic basis, particularly through expressions of audit and contract culture. These are further entrenched through perception of deficits in culture. However, an important and emerging counter narrative exists of recipients displaying agency through challenges to conventional hegemonic development. Bourdieu's theory of capital and in particular symbolic capital could be important approaches to conceptualise interactions as groups seek to trade, transfer and accrue capital in an effort to maintain and enhance their positions (Swartz, 1997). The CCA field possesses significant resources that can both disempower as well as empower in its efforts towards fundamental change (Grenfell & ebrary, 2010).

The challenge was that CCA program systems were well embedded and change may be difficult. Transformative change that starts to address underlying economic system failures will require disruption to existing ways of doing things, but the ability of CCA programs to do anything that is seen as radical is limited as development interventions are required to be

non-political. With that in mind, research into the perspectives and relationships of those involved with CCA programs is a good initial step to determine how this change can occur.

References

- Abram, S. (2001). 'Among Professionals': Working with Pressure Groups and Local Authorities In D. N. Gellner & E. Hirsch (Eds.), *Inside Organisations Anthropologist at Work* United Kingdom Berg.
- Air New Zealand. (2019). Carbon. Retrieved 23/01/2019, 2019, from <https://www.airnewzealand.co.nz/sustainability-carbon-reduction-management>
- Albert, S., Albert, J. A., Olds, A. D., Cruz-Trinidad, A., & Schwarz, A.-M. (2015). Reaping the reef: Provisioning services from coral reefs in Solomon Islands. *Marine Policy*, 62, 244-251. <https://doi.org/10.1016/j.marpol.2015.09.023>
- Allen, M. G., & Porter, D. J. (2016). Managing the transition from logging to mining in post-conflict Solomon Islands. *The Extractive Industries and Society*, 3(2), 350-358. <https://doi.org/10.1016/j.exis.2016.01.002>
- Alston, M. (2013). Women and adaptation. *Wiley Interdisciplinary Reviews: Climate Change*, 4(5), 351-358. <https://doi.org/10.1002/wcc.232>
- Anglican Church of Melanesia Media Office. (2017). Decade of Evangelism and Renewal 2017 to 2028 Retrieved 19 August 2018, from <http://www.acom.org.sb/ministries/board-of-mission/evangelism-and-renewal/item/930-decade-of-evangelism-and-renewal-2017-to-2028>
- Asad, T. (1979). Anthropology and the Colonial Encounter. In (Originally publish 1979 ed., pp. 85-94). Berlin, New York: DE GRUYTER MOUTON.
- Aswani, S. (2002). Assessing the Effects of Changing Demographic and Consumption Patterns on Sea Tenure Regimes in the Roviana Lagoon, Solomon Islands. *AMBIO*, 31(4), 272-284. <https://doi.org/10.1579/0044-7447-31.4.272>
- Baaz, M. E. (2004). *The paternalism of partnership: a postcolonial reading of identity in development aid*. New York: Zed Books.
- Balama, C., Augustino, S., Eriksen, S., & Makonda, F. B. S. (2016). Forest adjacent households' voices on their perceptions and adaptation strategies to climate change in Kilombero District, Tanzania. *SpringerPlus*, 5(1), 1-21. <https://doi.org/10.1186/s40064-016-2484-y>
- Ballard, J. R. (2015). *U.S. energy infrastructure: climate change vulnerabilities and adaptation efforts*. New York: Nova Publishers.
- Barnett, J. (2010). Adapting to climate change: three key challenges for research and policy—an editorial essay. *Wiley Interdisciplinary Reviews: Climate Change*, 1(3), 314-317. <https://doi.org/10.1002/wcc.28>
- Barnett, J., & Campbell, J. (2010). *Climate change and small island states: power, knowledge, and the South Pacific*. Washington, DC;London,: Earthscan.
- Basel, B. (December 2014). *Community-Based Vulnerability Assessment and Adaptation Plan, Buma, Te Anu, Vanikoro, Temotu Province, Solomon Islands* OceansWatch
- Bee, B. A. (2016). Power, perception, and adaptation: Exploring gender and social–environmental risk perception in northern Guanajuato, Mexico. *Geoforum*, 69, 71-80. <https://doi.org/10.1016/j.geoforum.2015.12.006>
- Bell, J. D., Kronen, M., Vunisea, A., Nash, W. J., Keeble, G., Demmke, A., . . . Andréfouët, S. (2009). Planning the use of fish for food security in the Pacific. *Marine Policy*, 33(1), 64-76. <https://doi.org/10.1016/j.marpol.2008.04.002>
- Betzold, C. (2016). Aid and adaptation to climate change in Pacific island countries.
- Birch, K. (2016). Market vs. contract? The implications of contractual theories of corporate governance to the analysis of neoliberalism. *Ephemera*, 16(1), 107.
- Bonatti, M., Sieber, S., Schlindwein, S. L., Lana, M. A., de Vasconcelos, A. C. F., Gentile, E., . . . Malheiros, T. F. (2016). Climate vulnerability and contrasting climate perceptions as an element for the development of community adaptation strategies: Case studies in Southern Brazil. *Land Use Policy*, 58, 114-122. <https://doi.org/10.1016/j.landusepol.2016.06.033>

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Brock-Utne, B., & Garbo, G. (2009). *Language and power: the implications of language for peace and development*. Dar es Salaam, Tanzania: Mkuki na Nyota Publishers.
- Brown-John, L. (1996). The New Public Management: Canada in Comparative Perspective Peter Aucoin Montreal: Institute for Research on Public Policy, 1995, pp. vii, 277. *Canadian Journal of Political Science/Revue canadienne de science politique*, 29(3), 573-574. <https://doi.org/10.1017/S000842390000826X>
- Brown, T. M. (2018). The Solomon Islands "Ethnic Tension" Conflict and the Solomon Islands Truth and Reconciliation Commission: A Personal Reflection. In (1 ed., p. 279): University of Calgary Press.
- Burnett, E., Dalipanda, T., Ogaoga, D., Gaiofa, J., Jilini, G., Halpin, A., . . . Yen, C. (2016). Knowledge, Attitudes, and Practices regarding Diarrhea and Cholera following an Oral Cholera Vaccination Campaign in the Solomon Islands. *PLoS Neglected Tropical Diseases*, 10(8), e0004937. <https://doi.org/10.1371/journal.pntd.0004937>
- Cannon, T. (2008). Vulnerability, "innocent" disasters and the imperative of cultural understanding. *Disaster Prevention and Management: An International Journal*, 17(3), 350-357. <https://doi.org/10.1108/09653560810887275>
- Caring For Creation (2018).
- Catford, D. A. (2014). Community Based Disaster Risk Management: A Necessity in Addressing Climate Change in the Pacific: A Case Study From The Solomon Islands In R. R. Qalo (Ed.), *Pacific voices: local governments and climate change : conference papers* (pp. 116 - 137). Suva, Fiji: USP Press.
- Climate Change Adaptation Technical Working Group. (2017). *Adapting to Climate Change in New Zealand - Stocktake Report from the Climate Change Adaptation Technical Working Group*. New Zealand Ministry for the Environment Retrieved from <http://www.mfe.govt.nz/sites/default/files/media/adapting-to-climate-change-stocktake-tag-report-final.pdf>
- Cornwall, A., & Brock, K. (2005). Beyond buzzwords "poverty reduction", "participation" and "empowerment" in development policy.
- Cox, J. (2009). Active citizenship or passive clientelism? Accountability and development in Solomon Islands. *Development in Practice*, 19(8), 964-980.
- Crowe, S., Cresswell, K., Robertson, A., Hubby, G., Avery, A. J., & Sheikh, A. (2011). The case study approach. *BMC Medical Research Methodology*, 11(1), 100-100. <https://doi.org/10.1186/1471-2288-11-100>
- Denis Jean-Jacques Jordy, S. E. S.). Community Resilience to Climate and Disaster Risk in Solomon Islands Project (CRISP)
- des Combes, H. D., Henstock, S. D., Holland, E. P., & Iese, V. M. (2014). Integrating Climate Change Adaptation and Disaster Risk Reduction at Local level In R. R. Qalo (Ed.), *Pacific voices: local governments and climate change : conference papers* (pp. 54-61). Suva, Fiji USP Press
- Dinnen, S., & Firth, S. (2008). *Politics and state building in Solomon Islands* (Vol. no. 2;no. 2.). Canberra, ACT, Australia: ANU E Press.
- Ebinger, J. O., Vergara, W., & World, B. (2011). *Climate impacts on energy systems: key issues for energy sector adaptation*. Washington, D.C: World Bank.
- Ensor, J. E., Abernethy, K. E., Hoddy, E. T., Aswani, S., Albert, S., Vaccaro, I., . . . Beare, D. J. (2018). Variation in perception of environmental change in nine Solomon Islands communities: implications for securing fairness in community-based adaptation. *Regional Environmental Change*, 18(4), 1131-1143. <https://doi.org/10.1007/s10113-017-1242-1>
- Feinberg, R. (2004). *Anuta: Polynesian lifeways for the 21st century* (2nd ed.). Long Grove, Ill: Waveland Press.

- Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods*, 5(1), 80-92. <https://doi.org/10.1177/160940690600500107>
- Findley, M. G., Harris, A. S., Milner, H. V., & Nielson, D. L. (2017). Who Controls Foreign Aid? Elite versus Public Perceptions of Donor Influence in Aid-Dependent Uganda. *INTERNATIONAL ORGANIZATION*, 71(4), 633-663. <https://doi.org/10.1017/S0020818317000273>
- Firth, R., & McLean, M. (1990). *Tikopia songs: poetic and musical art of a Polynesian people of the Solomon Islands* (Vol. 20). Cambridge;New York;: Cambridge University Press.
- Foley, A. M. (2018). Climate impact assessment and “islandness”: Challenges and opportunities of knowledge production and decision-making for Small Island Developing States. *INTERNATIONAL JOURNAL OF CLIMATE CHANGE STRATEGIES AND MANAGEMENT*, 10(2), 289-302. <https://doi.org/10.1108/IJCCSM-06-2017-0142>
- Forchtner, B., & Kølvrå, C. (2015). The Nature of Nationalism: Populist Radical Right Parties on Countryside and Climate. *Nature and Culture*, 10(2), 199-224. <https://doi.org/10.3167/nc.2015.100204>
- Ford, J. D. D., & Berrang-Ford, L. (2011). *Climate change adaptation in developed nations: from theory to practice* (Vol. 42.;42;). New York;Dordrecht;: Springer.
- Foucault, M. (1972). *The archaeology of knowledge*. London: Tavistock Publications.
- Foukona, J. D., & Timmer, J. (2016). The Culture of Agreement Making in Solomon Islands. *Oceania*, 86(2), 116-131. <https://doi.org/10.1002/oea.5131>
- Fraenkel, J. (2004). *The manipulation of custom: from uprising to intervention in the Solomon Islands*. Wellington, N.Z: Victoria University Press.
- Friedman, M. (1962). *Capitalism and freedom*. Chicago University of Chicago Press.
- Füssel, H.-M., & Klein, R. J. T. (2006). Climate Change Vulnerability Assessments: An Evolution of Conceptual Thinking. *Climatic Change*, 75(3), 301-329. <https://doi.org/10.1007/s10584-006-0329-3>
- Galletta, A., & Cross, W. E. (2013). *Mastering the semi-structured interview and beyond: from research design to analysis and publication*. New York: New York University Press.
- Gardner, K., & Lewis, D. (2000). Dominant Paradigms Overturned or ‘Business as Usual’? Development Discourse and the White Paper on International Development. *Critique of Anthropology*, 20(1), 15-29.
- Geertz, C. (1973). *The interpretation of cultures: selected essays*. New York: Basic Books.
- Geoff Lipsett-Moore, R. H., Nate Peterson, Edward Game, Willie Atu, Jimmy Kereseka, John Pita, Peter Ramohia and Catherine Siota. (2010). *Ridges to Reefs Conservation Plan for Choiseul Province, Solomon Islands*.The Nature Conservancy
- GIZ/SPC. (2015, March 2015). *Participatory Rural Appraisal of eight vulnerable communities in Choiseul Province: Nuatabu, Malangono (Panarui), Pangoe, Posarae, Sasamunga, Sube Sube, Voruvoru, and Vurago* SPC/GIZ.
- Godelier, M., & Strathern, M. (1991). *Big men and great men: personifications of power in Melanesia*. Cambridge [England];New York;Paris;: Cambridge University Press.
- Gonick, L., & Kasser, T. (2018). *Hypercapitalism: The Modern Economy, Its Values, and how to Change Them*: The New Press.
- Gray, A. (1997). Contract Culture and Target Fetishism:The distortive effects of output measures in local regeneration programmes. *Local Economy: The Journal of the Local Economy Policy Unit*, 11(4), 343-357. <https://doi.org/10.1080/02690949708726350>
- Grenfell, M., & ebrary, I. (2010). *Pierre Bourdieu: key concepts*. Durham [U.K.]: Acumen.
- Grube, D. C., & Howard, C. (2016). Is the Westminster System Broken Beyond Repair? *Governance*, 29(4), 467-481. <https://doi.org/10.1111/gove.12230>
- Hamilton, C. (2010). *Requiem for a species: why we resist the truth about climate change*. London;Washington, DC;: Earthscan.

- Hammersley, M. (2006). Ethnography: problems and prospects. *Ethnography and Education*, 1(1), 3-14. <https://doi.org/10.1080/17457820500512697>
- Harvey, D. (2005). *A brief history of neoliberalism*. Oxford;New York;: Oxford University Press.
- Hay, P. (2013). What the Sea Portends: A Reconsideration of Contested Island Tropes. *ISLAND STUDIES JOURNAL*, 8(2), 209-232.
- Heinberg, R. (2007). *Peak everything: waking up to the century of declines*. Gabriola, BC: New Society Publishers.
- Hobbs, S. K. (2018). Mobile phones, gender-based violence, and distrust in state services: Case studies from Solomon Islands and Papua New Guinea. *Asia Pacific Viewpoint*, 59(1), 60-73. <https://doi.org/10.1111/apv.12178>
- Hogbin, H. I. (1939). *Experiments in civilization: the effects of European culture on a native community of the Solomon Islands*. London Routledge & Sons.
- Hogbin, H. I. (1964). *A Guadalcanal society: the Kaoka speakers*. New York Holt, Rinehart and Winston.
- Hviding, E. (1996). *Guardians of Marovo Lagoon: practice, place, and politics in maritime Melanesia* (Vol. no. 14). Manoa;Honolulu;: University of Hawai'i Press.
- Hviding, E. (Writer). (2017). Climate change, Oceanic Sovereignities and Maritime Economies in the Pacific. In. Youtube East-West Center
- Inglis, J. (1993). *Traditional ecological knowledge: concepts and cases*. Ottawa, Ont., Canada: International Program on Traditional Ecological Knowledge.
- IPCC. (2018). *Summary for Policymakers. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways*. Geneva, Switzerland,: World Meteorological Organization,.
- Irvine, A., Drew, P., & Sainsbury, R. (2013). 'Am I not answering your questions properly?' Clarification, adequacy and responsiveness in semi-structured telephone and face-to-face interviews. *Qualitative Research*, 13(1), 87-106. <https://doi.org/10.1177/1468794112439086>
- Jackson, G., McNamara, K., & Witt, B. (2017). A Framework for Disaster Vulnerability in a Small Island in the Southwest Pacific: A Case Study of Emae Island, Vanuatu. *International Journal of Disaster Risk Science*, 8(4), 358-373. <https://doi.org/10.1007/s13753-017-0145-6>
- Kabutaulaka, T. (2015). Re-Presenting Melanesia: Ignoble Savages and Melanesian Alter-Natives. *The Contemporary Pacific*, 27(1), 110-145. <https://doi.org/10.1353/cp.2015.0027>
- Kabutaulaka, T. T. (2008). Westminster meets Solomons in the Honiara riots In S. Dinnen & S. Firth (Eds.), *Politics and state building in Solomon Islands* (Vol. no. 2.;no. 2;, pp. 96-118). Canberra, ACT, Australia: ANU E Press.
- Kais, S. M., & Islam, M. S. (2016). Community capitals as community resilience to climate change: Conceptual connections. *International Journal of Environmental Research and Public Health*, 13(12), 1211. <https://doi.org/10.3390/ijerph13121211>
- Kelman, I. (2010). Hearing local voices from Small Island Developing States for climate change. *Local Environment*, 15(7), 605-619. <https://doi.org/10.1080/13549839.2010.498812>
- Kent, J. (1972). *The Solomon Islands*. Newton Abbot;Harrisburg, Pa; : David and Charles.
- Kenter, J. O., Hyde, T., Christie, M., & Fazey, I. (2011). The importance of deliberation in valuing ecosystem services in developing countries—Evidence from the Solomon Islands. *Global Environmental Change*, 21(2), 505-521. <https://doi.org/10.1016/j.gloenvcha.2011.01.001>
- Kipnis, A. B. (2008). Audit cultures: Neoliberal governmentality, socialist legacy, or technologies of governing. *American Ethnologist*, 35(2), 275-289. <https://doi.org/10.1111/j.1548-1425.2008.00034.x>
- Klein, N. (2014). *This changes everything: capitalism vs. the climate* (First Simon & Schuster hardcover ed.). New York: Simon & Schuster.
- Klinenberg, E. (2016). Climate Change: Adaptation, Mitigation, and Critical Infrastructures. *Public Culture*, 28(2_79), 187-192. <https://doi.org/10.1215/08992363-3427415>

- Laracy, H. (1983). *Pacific protest: the Maasina Rule Movement, Solomon Islands, 1944-1952*. Suva, Fiji Institute of Pacific Studies, University of the South Pacific. Institute of Pacific Studies.
- Leonard, S., Parsons, M., Olawsky, K., & Kofod, F. (2013). The role of culture and traditional knowledge in climate change adaptation: Insights from East Kimberley, Australia. *Global Environmental Change*, 23(3), 623-632.
- Lijphart, A. (2012). *Patterns of democracy: government forms and performance in thirty-six countries* (2nd ed.). New Haven [Conn.]: Yale University Press.
- Madsen, H. M., Andersen, M. M., Rygaard, M., & Mikkelsen, P. S. (2018). Definitions of event magnitudes, spatial scales, and goals for climate change adaptation and their importance for innovation and implementation. *Water Research*, 144, 192-203.
<https://doi.org/10.1016/j.watres.2018.07.026>
- Mandelbaum, M. (2003). *The ideas that conquered the world: peace, democracy, and free markets in the twenty-first century*. New York: PublicAffairs.
- Mann, M. E., & Ebooks, C. (2012). *The hockey stick and the climate wars: dispatches from the front lines*. New York: Columbia University Press.
- Maslow, A. H., Cox, R., & Frager, R. (1987). *Motivation and personality* (3rd ed.). New York: Longman.
- Mason, C. F., Polasky, S., & Tarui, N. (2017). Cooperation on climate-change mitigation. *European Economic Review*, 99, 43-55. <https://doi.org/10.1016/j.euroecorev.2017.02.010>
- Mataki, M. S., Gideon; Donohoe, Paul; Alele, Davis; Sikajajaka, Lisa; . (2013). *Choiseul Province climate change vulnerability and adaptation assessment report: securing the future of Laurus now*. Suva, Fiji: Secretariat of the Pacific Community, German Agency for International Cooperation, (Deutsche Gesellschaft für Internationale Zusammenarbeit), Secretariat of the Pacific Regional Environment Programme.
- McCubbin, S., Smit, B., & Pearce, T. (2015). Where does climate fit? Vulnerability to climate change in the context of multiple stressors in Funafuti, Tuvalu. *Global Environmental Change*, 30, 43-55. <https://doi.org/10.1016/j.gloenvcha.2014.10.007>
- McGregor, J. A. (2004). Researching Well-Being: Communicating between the Needs of Policy Makers and the Needs of People. *Global Social Policy*, 4(3), 337-358.
<https://doi.org/10.1177/1468018104047491>
- McKibben, B. (1989). *The end of nature* (1st ed.). New York: Random House.
- McKibben, B. (2009). CLIMATE CHANGE. *Foreign Policy*(170), 32.
- McNamara, K. E. (2013). Taking stock of community-based climate-change adaptation projects in the Pacific: Climate change adaptation in the Pacific. *Asia Pacific Viewpoint*, 54(3), 398-405.
<https://doi.org/10.1111/apv.12033>
- Ministry for the Environment. (2018). The Paris Agreement. Retrieved 25/05/2018, from <http://www.mfe.govt.nz/climate-change/why-climate-change-matters/global-response/paris-agreement>
- Ministry of Environment, C. C., Disaster Management and Meteorology,. (2015). Climate Change Matrix Mapping 2014
- Morris, D. (2000). Charities in the contract culture: survival of the largest? *Legal Studies*, 20(3), 409-427. <https://doi.org/10.1111/j.1748-121X.2000.tb00151.x>
- Mosse, D. (2013). *Adventures in Aidland: the anthropology of professionals in international development* (Vol. 6;6.). New York: Berghahn Books.
- Nalau, J., Becken, S., & Mackey, B. (2018). Ecosystem-based Adaptation: A review of the constraints. *Environmental Science and Policy*, 89, 357-364. <https://doi.org/10.1016/j.envsci.2018.08.014>
- Nature Conservancy. (2017, 2 November 2017). Nature's Leading Women 2017 - Connecting women leaders from Australia and the Pacific Islands
- O'Reilly, K. (2005). *Ethnographic methods*. New York;London;: Routledge.
- OECD. (2009). *Integrating climate change adaptation into development co-operation: policy guidance*. Paris: OECD.

- Otto-Zimmermann, K. (2011). *Resilient cities: cities and adaptation to climate change - proceedings of the Global Forum 2010* (Vol. 1;1.). Dordrecht: Springer.
- Ourbak, T., & Magnan, A. K. (2017). The Paris Agreement and climate change negotiations: Small Islands, big players. *Regional Environmental Change*, 1-7. <https://doi.org/10.1007/s10113-017-1247-9>
- Pacific Community, Pacific Islands Forum Secretariat, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, & United Nations Development Programme. (2017, September 2017). *Solomon Islands Climate Change and Disaster Risk Finance Assessment final Report* Suva, Fiji
- Pearse, R. (2017). Gender and climate change. *Wiley Interdisciplinary Reviews: Climate Change*, 8(2), e451-n/a. <https://doi.org/10.1002/wcc.451>
- Petheram, L., Zander, K. K., Campbell, B. M., High, C., & Stacey, N. (2010). 'Strange changes': Indigenous perspectives of climate change and adaptation in NE Arnhem Land (Australia). *Global Environmental Change*, 20(4), 681-692. <https://doi.org/10.1016/j.gloenvcha.2010.05.002>
- Powell, R. B., & Ham, S. H. (2008). Can ecotourism interpretation really lead to pro-conservation knowledge, attitudes and behaviour? Evidence from the Galapagos Islands. *Journal of Sustainable Tourism*, 16(4), 467-489. <https://doi.org/10.2167/jost797.0>
- Radio New Zealand. (2018a). Nickel mining set to start on Solomons' San Jorge island. Retrieved 04/05/19, 2019, from <https://www.radionz.co.nz/international/pacific-news/368068/nickel-mining-set-to-start-on-solomons-san-jorge-island>
- Radio New Zealand. (2018b). Stakes high for NZ seasonal worker recruitment in Solomons. *Dateline Pacific*, . Retrieved 14/05/19, 2019, from <https://www.rnz.co.nz/international/programmes/datelinepacific/audio/2018629639/stake-s-high-for-nz-seasonal-worker-recruitment-in-solomons>
- Radio New Zealand. (2019a). Over 600 tonnes of fuel onboard shipwreck leaking oil into Solomons' ocean. *Pacific News* Retrieved 04/05/19, 2019, from <https://www.radionz.co.nz/international/pacific-news/383368/over-600-tonnes-of-fuel-onboard-shipwreck-leaking-oil-into-solomons-ocean>
- Radio New Zealand. (2019b). Parliament passes Bill banning new offshore oil and gas exploration. Retrieved 24/01/2019, 2019, from <https://www.radionz.co.nz/news/political/375417/parliament-passes-bill-banning-new-offshore-oil-and-gas-exploration>
- Revelle, R., & Suess, H. E. (1957). Carbon Dioxide Exchange Between Atmosphere and Ocean and the Question of an Increase of Atmospheric CO₂ during the Past Decades. *Tellus*, 9(1), 18-27. <https://doi.org/10.3402/tellusa.v9i1.9075>
- Richards, R. (2014). Kesa and other shell valuables from Choiseul. In B. Burt & L. Bolton (Eds.), *The things we value: culture and history in Solomon Islands*. UK: Sean Kingston Publishing
- Riseth, J. Å., Tømmervik, H., Helander-Renvall, E., Labba, N., Johansson, C., Malnes, E., . . . Luft, v. o. I. (2011). Sámi traditional ecological knowledge as a guide to science: snow, ice and reindeer pasture facing climate change. *Polar Record*, 47(3), 202-217. <https://doi.org/10.1017/S0032247410000434>
- Rosenzweig, C., & Neofotis, P. (2013). Detection and attribution of anthropogenic climate change impacts. *Wiley Interdisciplinary Reviews: Climate Change*, 4(2), 121-150. <https://doi.org/10.1002/wcc.209>
- Sahlins, M. D. (1963). Poor Man, Rich Man, Big-man, Chief: Political Types in Melanesia and Polynesia. *Comparative Studies in Society and History*, 5(3), 285-303.
- Sauder, M., & Espeland, W. N. (2009). The Discipline of Rankings: Tight Coupling and Organizational Change. *American Sociological Review*, 74(1), 63-82. <https://doi.org/10.1177/000312240907400104>

- Saunders, M. I., Albert, S., Roelfsema, C. M., Leon, J. X., Woodroffe, C. D., Phinn, S. R., & Mumby, P. J. (2016). Tectonic subsidence provides insight into possible coral reef futures under rapid sea-level rise. *Coral Reefs*, 35(1), 155-167. <https://doi.org/10.1007/s00338-015-1365-0>
- Schipper, E. L. F. (2006). Conceptual history of adaptation in the UNFCCC process. *Review of European Community & International Environmental Law*, 15(1), 82-92.
- Schwarz, A.-M., Béné, C., Bennett, G., Boso, D., Hilly, Z., Paul, C., . . . Andrew, N. (2011). Vulnerability and resilience of remote rural communities to shocks and global changes: Empirical analysis from Solomon Islands. *Global Environmental Change*, 21(3), 1128-1140.
- Scott, C. (2016). Cultures of evaluation: tales from the end of the line. *Journal of Development Effectiveness*, 8(4), 553-560. <https://doi.org/10.1080/19439342.2016.1244701>
- Secretary General of the United Nations. (2016). *Paris Agreement, Paris, 2 December 2015, Entry Into Force* New York United Nations.
- Seddon, N. (2017). *Ecosystem-based adaptation: a win-win formula for sustainability in a warming world?* : International Institute for Environment and Development
- Selby, S. a. J., Moortaza (2016, October 2016). *Risk Governance - Building Blocks for Resilient Development in the Pacific A Policy Brief* | UNDP.
- Shore, C., & Wright, S. (1999). Audit culture and anthropology: neoliberalism in British higher education. *The Journal of the Royal Anthropological Institute*, 5(4), 557.
- Shore, C., & Wright, S. (2015). Audit Culture Revisited: Rankings, Ratings, and the Reassembling of Society. *Current Anthropology*, 56(3), 421-444. <https://doi.org/10.1086/681534>
- Short, D., & Szolucha, A. (2016). Fracking Lancashire: The planning process, social harm and collective trauma. *Geoforum*. <https://doi.org/10.1016/j.geoforum.2017.03.001>
- Provincial Government Act Retrieved from <http://www.parliament.gov.sb/files/legislation/Acts/1996/The%20Provincial%20Government%20ACT%201996.pdf>
- Solomon Islands Government. (2012). *Census 2009 - Basic Tables and Census Description*. Honiara National Statistics Office
- Solomon Islands Meteorological Service. (2011, 2011). Current and future climate of the Solomon Islands Pacific Climate Change Science Program
- Solomon Islands National Statistics Office. (2015). Home Page Retrieved 23/10/2018, from <https://www.statistics.gov.sb/>
- Sornig, K. (1989). Some remarks on linguistic strategies of persuasion In R. Wodak (Ed.), *Language, power, and ideology: studies in political discourse* (Vol. 7;7., pp. 95-114). Amsterdam;Philadelphia;: J. Benjamins.
- Steffen, W. (2018, 21/02/2018). *Rising Risks, Critical Choices*. presented at the Pacific Ocean - Pacific Climate Wellington
- Stott, E. (2015). Charities in the contract culture : the unintended consequences of partnership and intervention in the free market
- Swartz, D. (1997). *Culture & power: the sociology of Pierre Bourdieu*. Chicago: University of Chicago Press.
- Talo, F. (2008, November 2008). *Solomon Islands National Adaption Programmes of Action* Honiara Ministry of Environment, Conservation and Meteorology
- Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: integrating quantitative and qualitative approaches in the social and behavioral sciences*. Los Angeles: SAGE.
- The Guardian. (2019). Carmichael coalmine - latest news Retrieved 24/01/19, 2019, from <https://www.theguardian.com/environment/carmichael-coalmine>
- Travis, W. R., Smith, J. B., & Yohe, G. W. (2018). Moving toward 1.5 degrees C of warming: implications for climate adaptation strategies. *CURRENT OPINION IN ENVIRONMENTAL SUSTAINABILITY*, 31, 146-152. <https://doi.org/10.1016/j.cosust.2018.03.003>

- Tryjanowski, P., Wu, Q., Imeson, A., Casassa, G., Estrella, N., Rosenzweig, C., . . . Rawlins, S. (2008). Attributing physical and biological impacts to anthropogenic climate change. *Nature*, 453(7193), 353-357. <https://doi.org/10.1038/nature06937>
- UNDP. (2015). *Risk Governance - Strengthening Resilience to Climate Change and Disasters Analytical pieces* UNDP Unpublished
- UNDP. (2016). Pacific Risk Resilience Programme Retrieved 09/02/2019, 2019, from <http://www.pacific.undp.org/content/pacific/en/home/operations/projects/resilience-sustainable-development/PRRP.html>
- UNDP. (2017). Oceans and small island states: First think opportunity, then think blue. Retrieved 14/11/2018, 2018, from <http://www.undp.org/content/undp/en/home/blog/2017/2/22/Oceans-and-small-island-states-First-think-opportunity-then-think-blue.html>
- UNDP. (2018a, 24/10/2018). 2018 All Human Development Data - 2018 Statistical Annex
- UNDP. (2018b). Human Development Indices and Indicators: 2018 Statistical Update, Briefing note for countries on the 2018 Statistical Update, Solomon Islands
- UNDP. (2018c, September 25 – October 01, 2018). *Solomon Islands - Prime Minister Addresses General Debate, 73rd Session*. Paper presented at the 73rd Session of the General Assembly of the UN New York
- UNDP. (2018d). United Nations Human Development Reports- Human Development Indicators *2018 Statistical Update* Retrieved 23 October 2018, from <http://hdr.undp.org/en/countries/profiles/PNG>
- UNDP. (2019). About REDD+. Retrieved 26/05/2019, from <https://www.unredd.net/about/what-is-redd-plus.html>
- United Nations. (1992). United Nations Framework Convention on Climate Change
- USAID. (2019). Choiseul Integrated Climate Change Programme
- USAID/GIZ. (2018, March 27, 2018). *Choiseul Integrated Climate Change Programme (CHICCHAP) Final Report* Suva: USAID. Retrieved from http://ccprojects.gsd.spc.int/wp-content/uploads/2018/05/Choiseul-Integrated-Climate-Change-Programme-Report_Mar-2018.pdf
- Valencia, R. R. (2010). *Dismantling contemporary deficit thinking: educational thought and practice*. New York: Routledge.
- Vink, M. J., Dewulf, A., & Termeer, C. (2013). The role of knowledge and power in climate change adaptation governance: a systematic literature review. *Ecology and Society*, 18(4), 46. <https://doi.org/10.5751/ES-05897-180446>
- Weart, S. R. (2003). *The discovery of global warming*. Cambridge, Mass: Harvard University Press.
- Wenzel, G. W. (2009). Canadian Inuit subsistence and ecological instability - If the climate changes, must the Inuit? *Polar Research*, 28(1), 89-99. <https://doi.org/10.1111/j.1751-8369.2009.00098.x>
- Westley, F., Olsson, P., Folke, C., Homer-Dixon, T., Vredenburg, H., Loorbach, D., . . . Stockholm Resilience, C. (2011). Tipping Toward Sustainability: Emerging Pathways of Transformation. *AMBIO*, 40(7), 762-780. <https://doi.org/10.1007/s13280-011-0186-9>
- White, C. M. (2014). Deficit thinking redux: cultural deficit discourse and an urban community and school in Fiji. *Social Identities*, 20(2-3), 155-170. <https://doi.org/10.1080/13504630.2014.978750>
- Winterford, K., Chong, J. Gero, A. (2016). *Pacific Risk Resilience Program Mid-Term Evaluation Report*. Prepared for UNDP by the Institute for Sustainable Futures, University of Technology Sydney.
- Woodside, A. G. (2016). *Case Study Research: Core Skills in Using 15 Genres* (2nd ed.). Bingley: Emerald Publishing Limited.
- World Bank Group. (2014, May 2014). *Towards Better Investment In Rural Communities* Washington DC World Bank Group

- World Bank Group. (2017, June 1). *Solomon Islands Systematic Country Diagnostic Priorities for Supporting Poverty Reduction & Promoting Shared Prosperity* (Report No: 115425-SB). World Bank Group
- Wright, C., & Nyberg, D. (2015). *Climate change, capitalism, and corporations: processes of creative self-destruction*.
- Xue, W., Hine, D. W., Marks, A. D. G., Phillips, W. J., & Zhao, S. (2016). Cultural worldviews and climate change: A view from China. *Asian Journal of Social Psychology*, 19(2), 134-144.
<https://doi.org/10.1111/ajsp.12116>